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# AEROSPACE AND DEFENCE-RELATED INDUSTRIES



## STATISTICAL SURVEY REPORT 1995

Aerospace and Defence Branch  
April 1996

Canada



This report is the 1995 annual survey of the Canadian Aerospace and Defence Industries, collected and conducted on behalf of the industry by the Aerospace and Defence Branch of Industry Canada.

Enquiries or comments on this report can be made through the individual in Industry Canada listed below. In making enquiries please note that the information contained in the survey is provided in aggregate form for the industry as a whole. Specific company data, or data that could reveal specific company performance will not be divulged or discussed.

*Jim House (613) 954-3795*

*Aerospace and Defence Branch  
Industry Canada  
235 Queen Street  
Ottawa, Ontario  
Canada  
K1A 0H5*

1960, about 1000 people were still living in the camp. This was largely off  
of the beaten track, and the camp was not easily found.

During the next few days, I visited other settlements, some good and some  
of the worst in the land. I found that the people in the worst settlements  
had no money, no food, and little clothing. They had no hope and no  
desire to live. They had lost all sense of family and community.

After a few days, I left.

When I returned, I found

the camp still there.

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## ***Introduction***

The 1995 annual report on Canada's Aerospace and Defence Industries marks the 11<sup>th</sup> anniversary of the department's annual survey of this industry sector. The publication of these historical figures along with the latest survey results is made possible with the co-operation of the participating companies and the ongoing support of the Aerospace Industries Association of Canada (AIAC) and the Canadian Defence Preparedness Association (CDPA).

During 1995, survey forms were sent to 78 Canadian Aerospace and Defence-Related companies with sales in excess of \$10 million annually. Data for this year's survey were collected over the period March 1995 through April 1995. Complete and partial responses were received from 59 companies. Measures were taken within Industry Canada to compensate for missing data through reference to other data sources or by contacting companies. Allowance has also been made for the small business element that was not captured directly in the survey.

As in previous years, companies have been assured that their individual returns will be held in strictest confidence within Industry Canada and the data will be employed and released in aggregate form only.



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## ***SUMMARY OF SURVEY RESULTS***



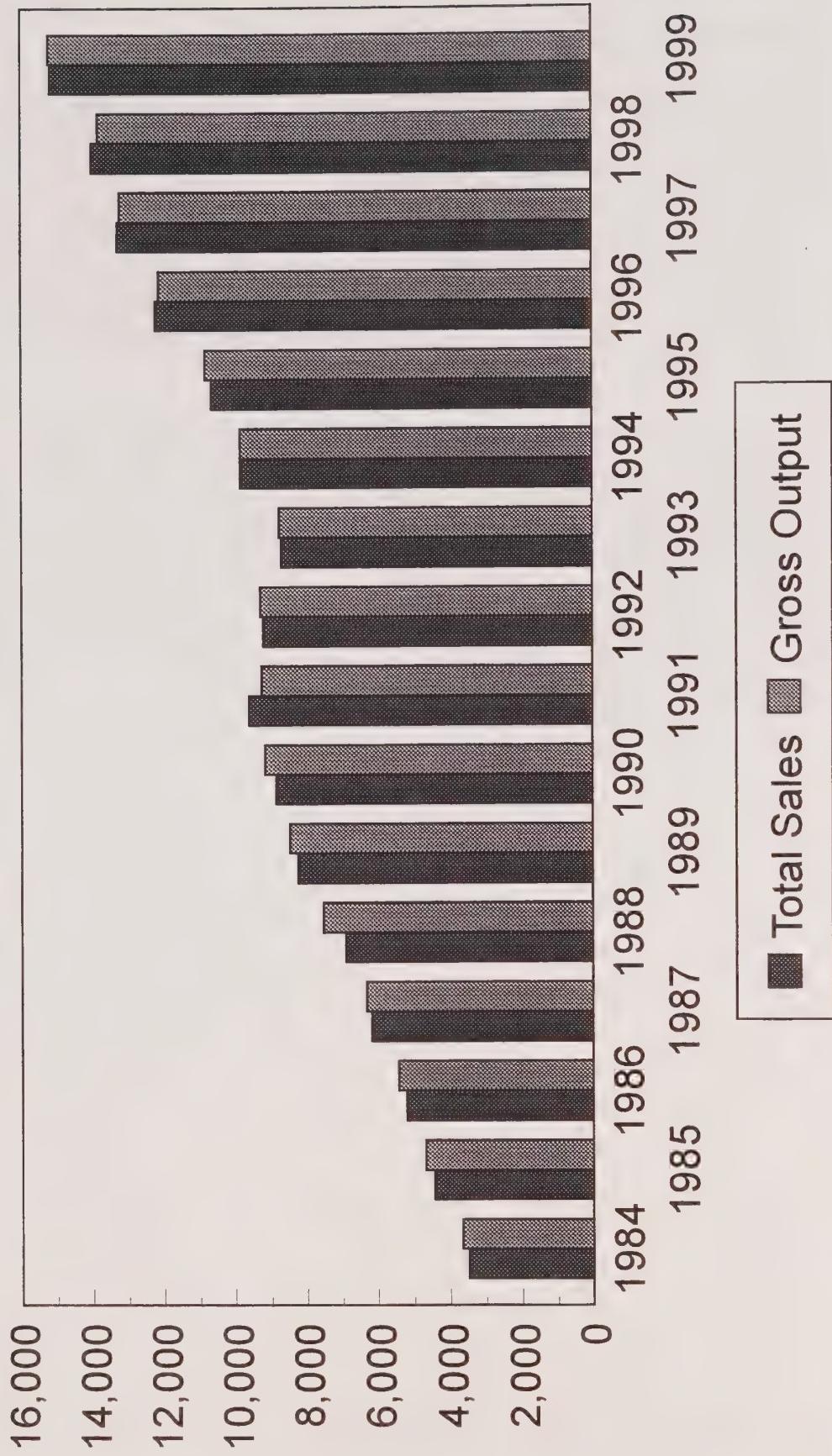
## *Summary of Survey Results*

The 1995 survey returns indicate a strengthening economic recovery in the Aerospace and Defence sector. The expansion in economic activity, which began in 1994, continued in 1995 led by growth in export sales. Overall, sales and output moved upward and, as the turnaround intensified, signs of recovery spread from the Airframes and Propulsion subsectors to other subsectors such as Avionics and Space. With the expansion in output, employment increased somewhat following the sharp declines during the 1991-1993 recession. Investment continued to grow in 1995, but the rate slowed reflecting lower investment spending by customers (particularly governments). Investment spending by companies in the sector itself, continued upward in 1995.

Company forecasts for the sector between 1995 and 1999 indicate that output and sales will continue to increase, spurred on largely by the growth in export demand. In contrast, employment growth will remain sluggish and will not achieve pre-recession peaks by 1999. Moreover, investment spending is expected to decline over the period from current high levels. In part, this weakness in the growth in investment spending will be attributed to continued declines in customers such as the government as a source of demand, but will also reflect cutbacks in government cost shared programs with industry such as the Defence Industry Productivity Program (DIPP). Further details on the performance and forecast of the Industry are found in the attached tables and charts.

# TOTAL SALES vs GROSS OUTPUT

\$ Millions



**Total Sales and Gross Output (\$ Millions)**

Fiscal Year	Total Sales	Gross Output
1984	3482	3654
1985	4438	4682
1986	5198	5432
1987	6184	6323
1988	6902	7530
1989	8230	8453
1990	8844	9144
1991	9593	9236
1992	9196	9262
1993	8683	8902
1994	9820	9828
1995*	10626	10854
1996*	12200	12156
1997*	13273	13191
1998*	13992	13791
1999*	15163	15632

**Annual Growth Rates**

Fiscal Year	Total Sales	Gross Output
1985	27%	28%
1986	17%	16%
1987	19%	16%
1988	12%	19%
1989	19%	12%
1990	7%	8%
1991	8%	1%
1992	-4%	0.3%
1993	-6%	-4%
1994	13%	10%
1995*	8%	10%
1996*	15%	12%
1997*	9%	9%
1998*	5%	5%
1999*	8%	13%

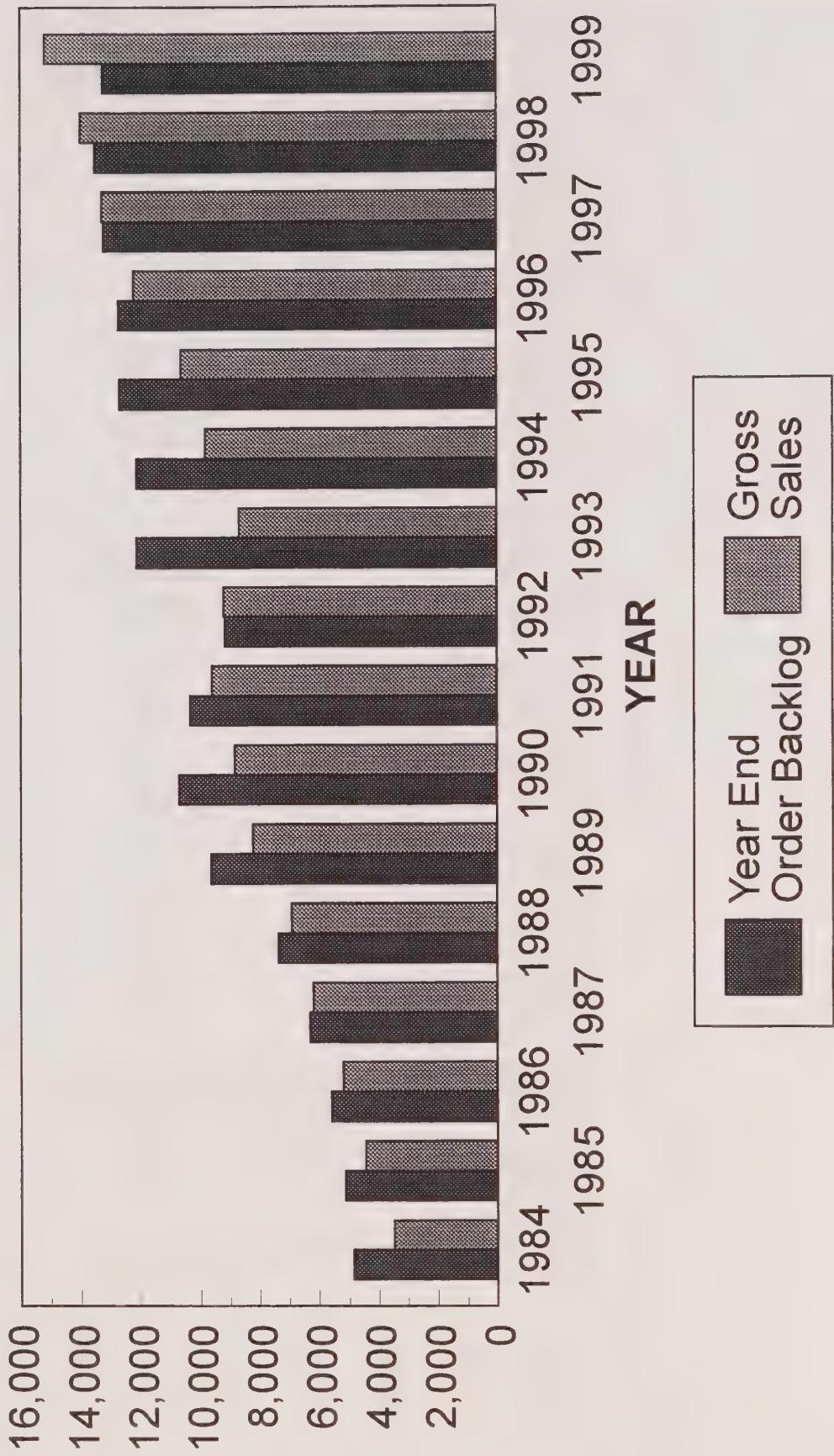
**Compound Annual Average Rate of Growth**

Fiscal Year	Total Sales	Gross Output
1984-1991	16%	14%
1991-1993	-5%	-2%
1994-1999	9%	10%

Years with \* are Forecast

# GROSS SALES vs ORDER BACKLOG

## \$ MILLIONS



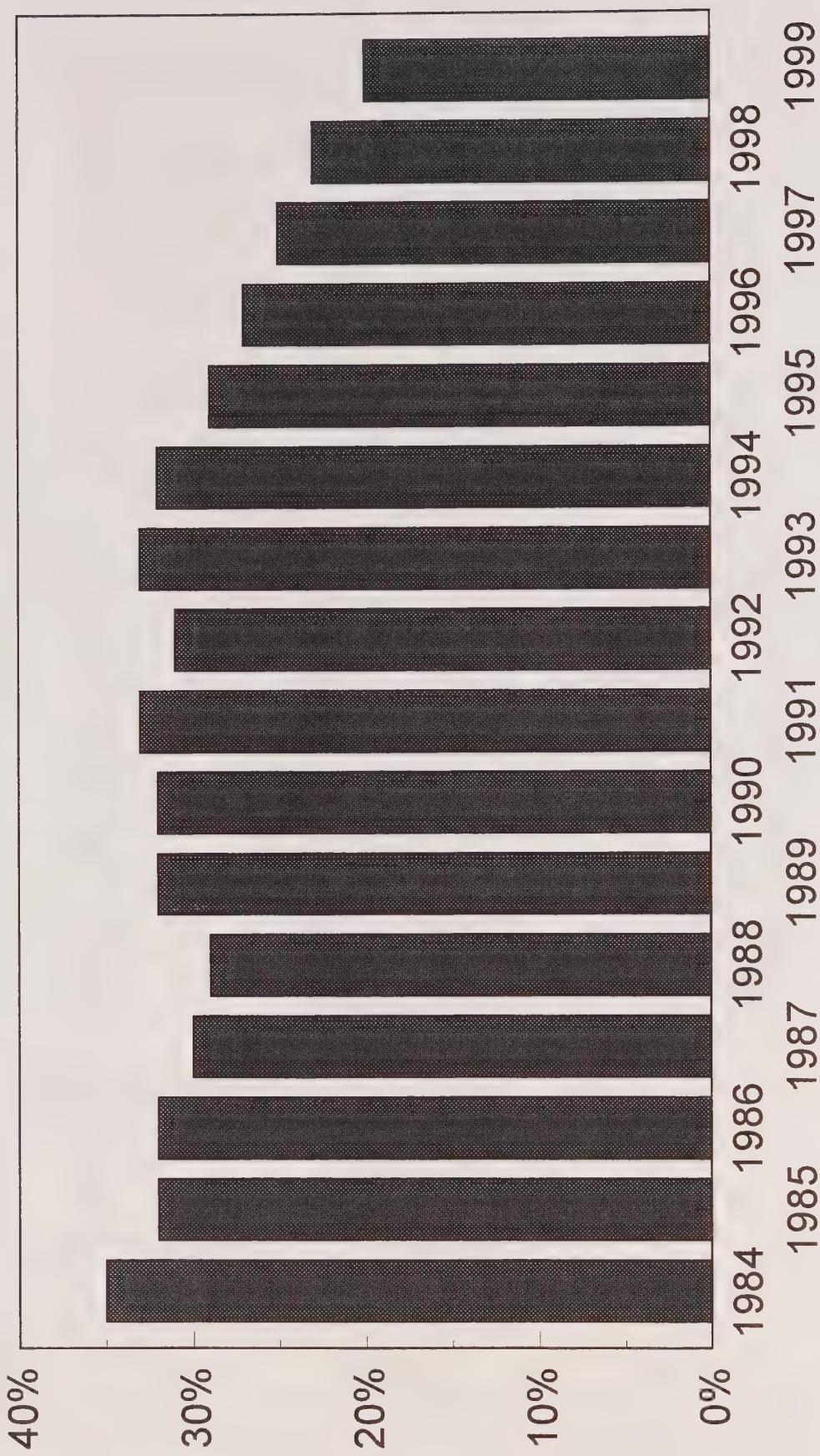
Order Backlog and Gross Sales (\$ Millions)		
Fiscal Year	Backlog	Gross Sales
1984	4841	3482
1985	5115	4438
1986	5579	5198
1987	6290	6184
1988	7376	6902
1989	9625	8230
1990	10708	8844
1991	10325	9593
1992	9165	9196
1993	12103	8683
1994	12106	9820
1995*	12682	10626
1996*	12713	12200
1997*	13213	13273
1998*	13512	13992
1999*	13262	15163

Annual Growth Rates		
Fiscal Year	Backlog	Gross Sales
1984	6%	27%
1985	9%	17%
1986	13%	19%
1987	17%	12%
1988	30%	19%
1989	11%	7%
1990	-4%	8%
1991	-11%	-4%
1992	32%	-6%
1993	0%	13%
1994	5%	8%
1995*	0%	15%
1996*	4%	9%
1997*	2%	5%
1998*	-2%	8%
1999*		

Compound Annual Average Rate of Growth		
Fiscal Year	Backlog	Gross Sales
1984-1991	11%	16%
1991-1993	8%	-5%
1994-1999	2%	9%

Years with * are Forecast
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# Inventories as a % of Gross Sales



Inventories as a % of Gross Sales			
Fiscal Year	Inventories	Gross Sales	Percentage
1984	1227	3482	35%
1985	1399	4438	32%
1986	1643	5198	32%
1987	1877	6184	30%
1988	2016	6902	29%
1989	2644	8230	32%
1990	2867	8844	32%
1991	3167	9593	33%
1992	2810	9196	31%
1993	2876	8683	33%
1994	3095	9820	32%
1995*	3103	10626	29%
1996*	3331	12200	27%
1997*	3287	13273	25%
1998*	3205	13992	23%
1999*	3004	15163	20%

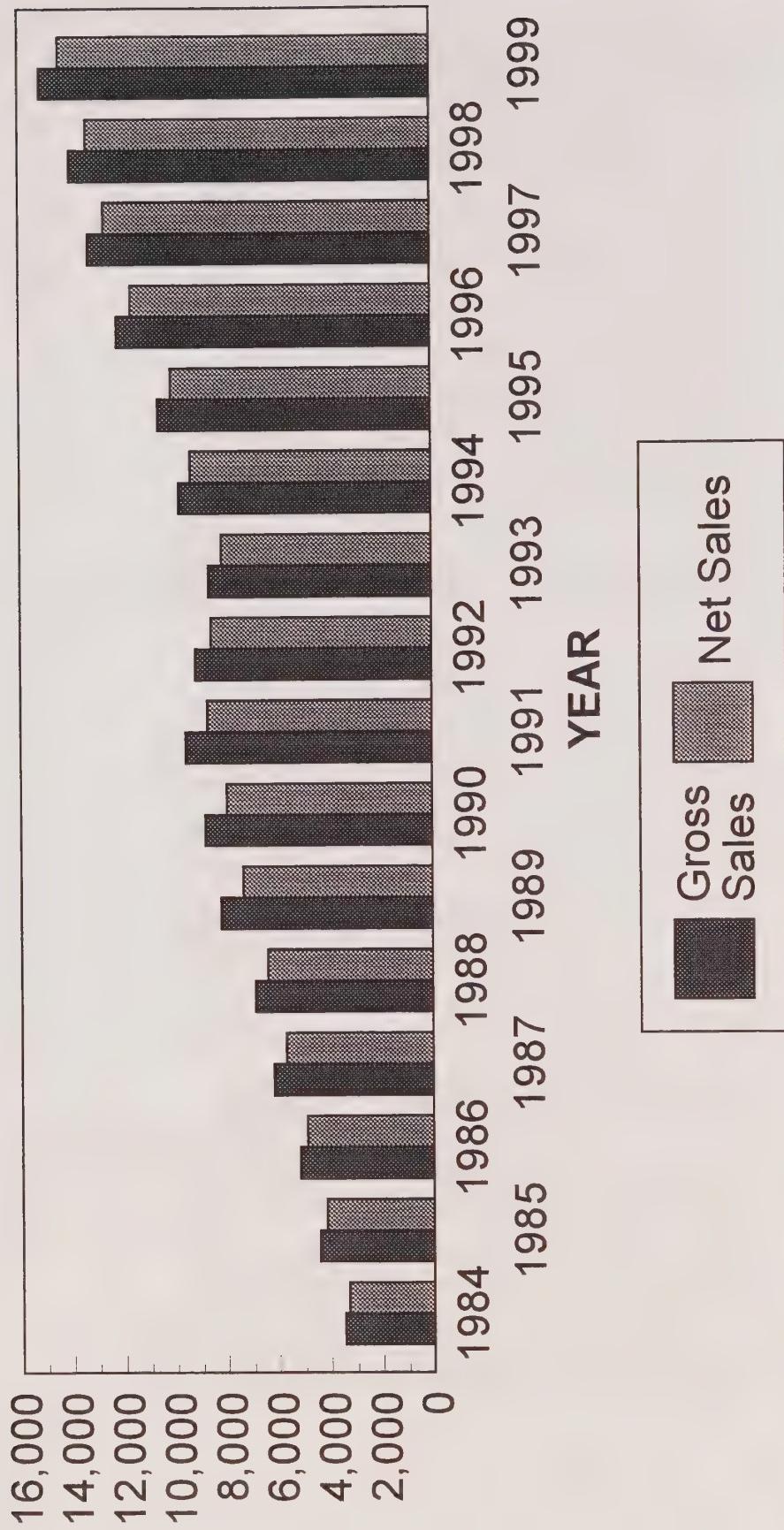
Annual Growth Rates			
Fiscal Year	Inventories	Gross Sales	Percentage
1985	14%	27%	-11%
1986	17%	17%	0%
1987	14%	19%	-4%
1988	7%	12%	-4%
1989	31%	19%	10%
1990	8%	7%	1%
1991	10%	8%	2%
1992	-11%	-4%	-7%
1993	2%	-6%	8%
1994	8%	13%	-5%
1995*	0%	8%	-7%
1996*	7%	15%	-7%
1997*	-1%	9%	-9%
1998*	-2%	5%	-8%
1999*	-6%	8%	-14%

Compound Annual Average Rate of Growth			
Fiscal Year	Inventories	Gross Sales	Percentage
1984-1991	15%	16%	-1%
1991-1993	-5%	-5%	0%
1994-1999	-1%	9%	-9%

Years with \* are Forecast

# GROSS SALES vs NET SALES

## \$ MILLIONS



Net Sales = Gross Sales - Sales to Canadian  
Aerospace & Defence Manufacturers

**Net Sales vs Gross Sales (\$ Millions)**

Fiscal Year	Net Sales	Gross Sales
1984	3332	3482
1985	4166	4438
1986	4905	5198
1987	5708	6184
1988	6415	6902
1989	7373	8230
1990	7993	8844
1991	8747	9593
1992	8595	9196
1993	8171	8683
1994	9369	9820
1995*	10117	10626
1996*	11666	12200
1997*	12685	13273
1998*	13338	13992
1999*	14420	15163

**Annual Growth Rates**

Fiscal Year	Net Sales	Gross Sales
1985	25%	27%
1986	18%	17%
1987	16%	19%
1988	12%	12%
1989	15%	19%
1990	8%	7%
1991	9%	8%
1992	-2%	-4%
1993	-5%	-6%
1994	15%	13%
1995*	8%	8%
1996*	15%	15%
1997*	9%	9%
1998*	5%	5%
1999*	8%	8%

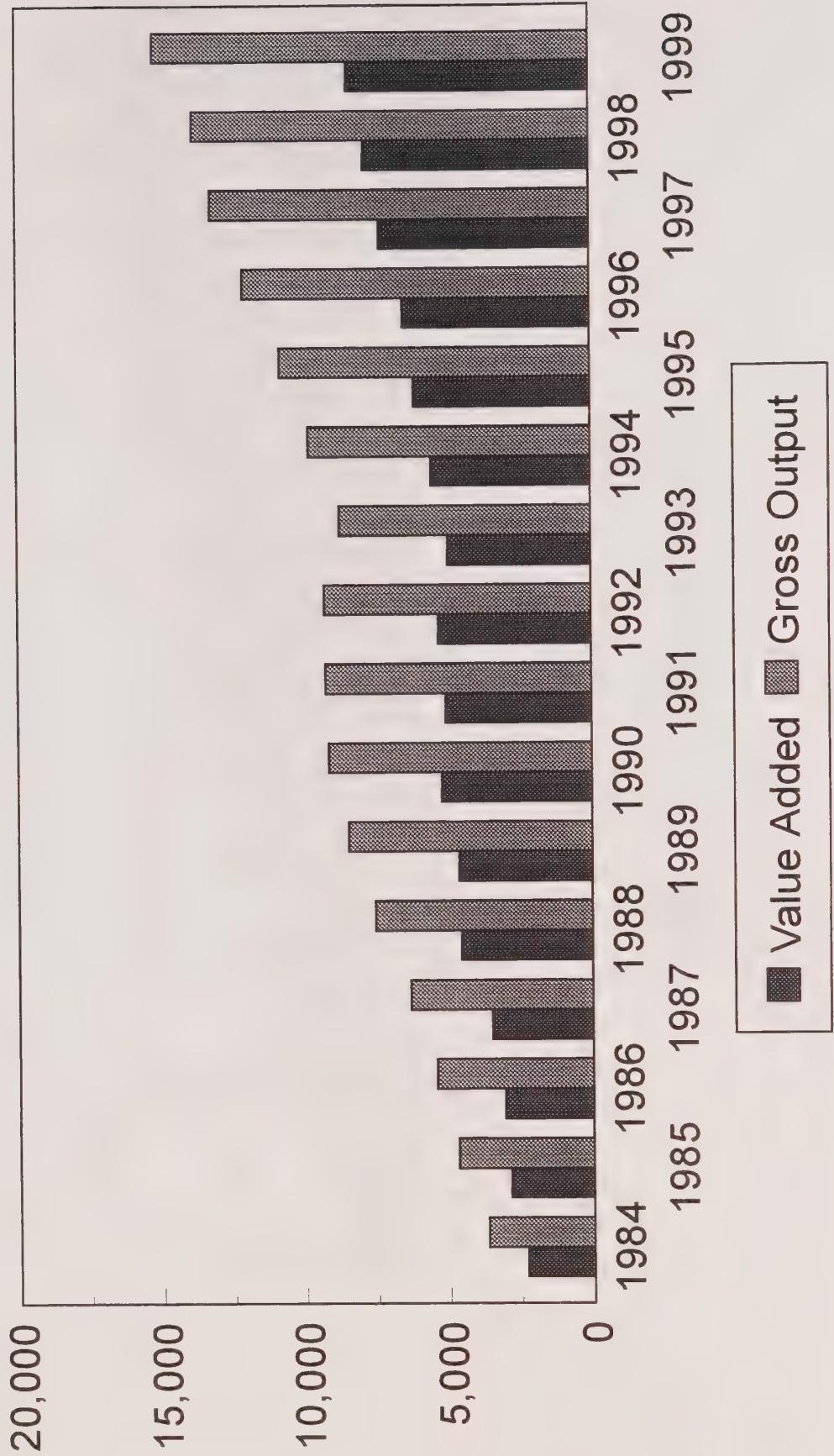
**Compound Annual Growth Rate**

Fiscal Year	Net Sales	Gross Sales
1984-1991	15%	16%
1991-1993	-3%	-5%
1994-1999	9%	9%

Years with \* are Forecast

# Gross Output vs Value Added

\$ Millions



<b>Gross Output vs Value Added (\$ Millions)</b>		
Fiscal Year	Gross Output	Value Added
1984	3654	2296
1985	4682	2857
1986	5432	3058
1987	6323	3483
1988	7530	4549
1989	8453	4631
1990	9144	5224
1991	9236	5074
1992	9262	5323
1993	8902	5135
1994	9828	5553
1995	10854	6181
1996	12156	6556
1997	13191	7281
1998	13791	7802
1999	15632	8845

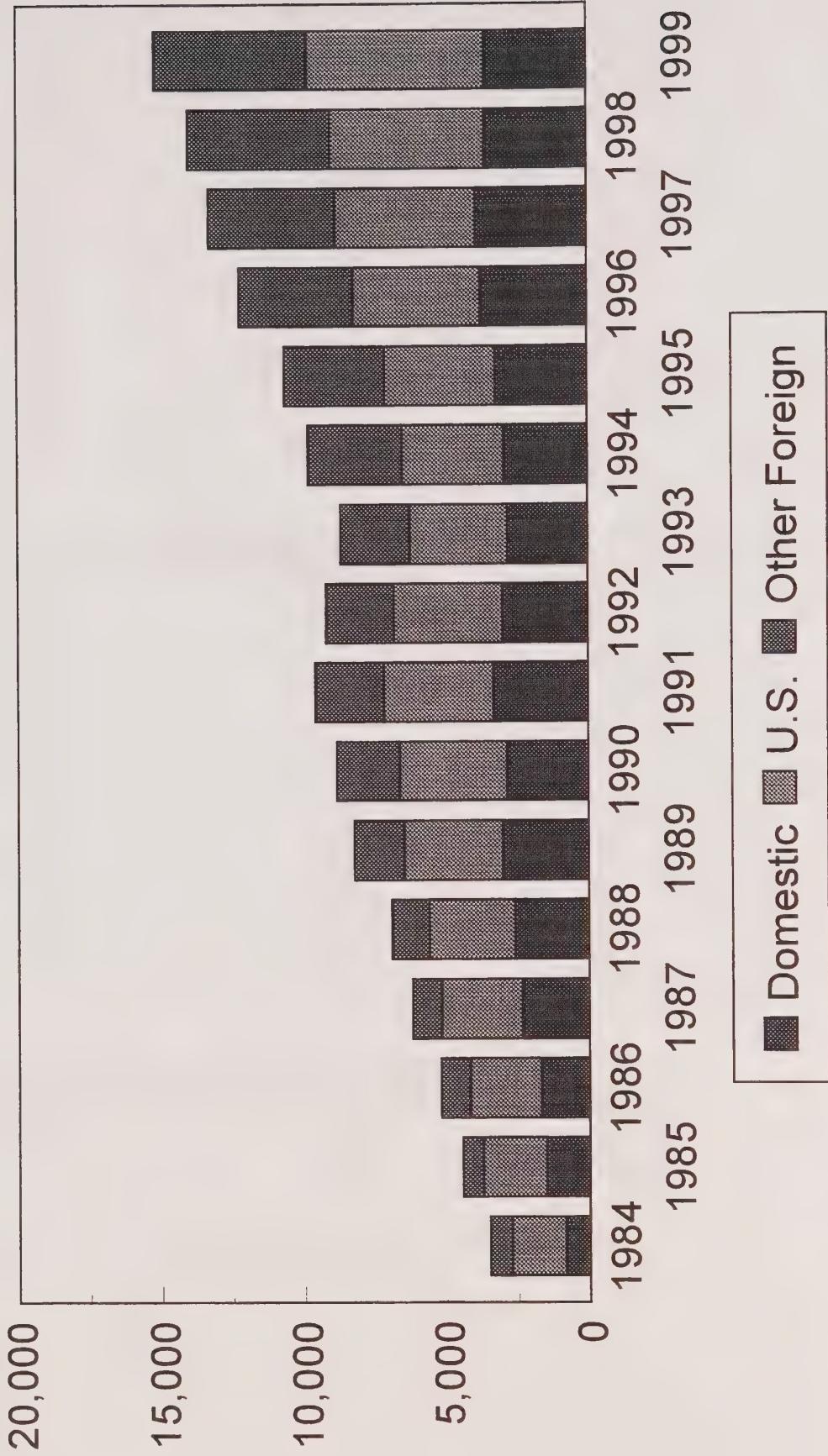
<b>Annual Growth Rates</b>		
Fiscal Year	Gross Output	Value Added
1985	28%	24%
1986	16%	7%
1987	16%	14%
1988	19%	31%
1989	12%	2%
1990	8%	13%
1991	1%	-3%
1992	0%	5%
1993	-4%	-4%
1994	10%	8%
1995*	10%	11%
1996*	12%	6%
1997*	9%	11%
1998*	5%	7%
1999*	13%	13%

<b>Compound Annual Average Rate of Growth</b>		
Fiscal Year	Gross Output	Value Added
1984-1991	14%	12%
1991-1993	-2%	1%
1994-1999	10%	10%

Years with \* are Forecast

# SALES BY GEOGRAPHIC AREA

\$ Millions



<b>Sales by Geographic Area (\$ Millions)</b>				
Fiscal Year	Canada	USA	Other Foreign	Total
1984	871	1839	772	3482
1985	1535	2185	718	4438
1986	1701	2455	1041	5197
1987	2325	2827	1031	6183
1988	2570	3016	1316	6902
1989	3001	3449	1779	8229
1990	2851	3740	2253	8844
1991	3301	3860	2431	9592
1992	2978	3824	2393	9195
1993	2807	3406	2470	8683
1994	2921	3580	3319	9820
1995*	3203	3903	3520	10626
1996*	3703	4496	4000	12199
1997*	3870	4954	4449	13273
1998*	3560	5448	4984	13992
1999*	3562	6247	5354	15163

<b>Percentage of Total Sales by Geographic Area</b>				
Fiscal Year	Canada	USA	Other Foreign	Total
1984	25%	53%	22%	100%
1985	35%	49%	16%	100%
1986	33%	47%	20%	100%
1987	38%	46%	17%	100%
1988	37%	44%	19%	100%
1989	36%	42%	22%	100%
1990	32%	42%	25%	100%
1991	34%	40%	25%	100%
1992	32%	42%	26%	100%
1993	32%	39%	28%	100%
1994	30%	36%	34%	100%
1995*	30%	37%	33%	100%
1996*	30%	37%	33%	100%
1997*	29%	37%	34%	100%
1998*	25%	39%	36%	100%
1999*	23%	41%	35%	100%

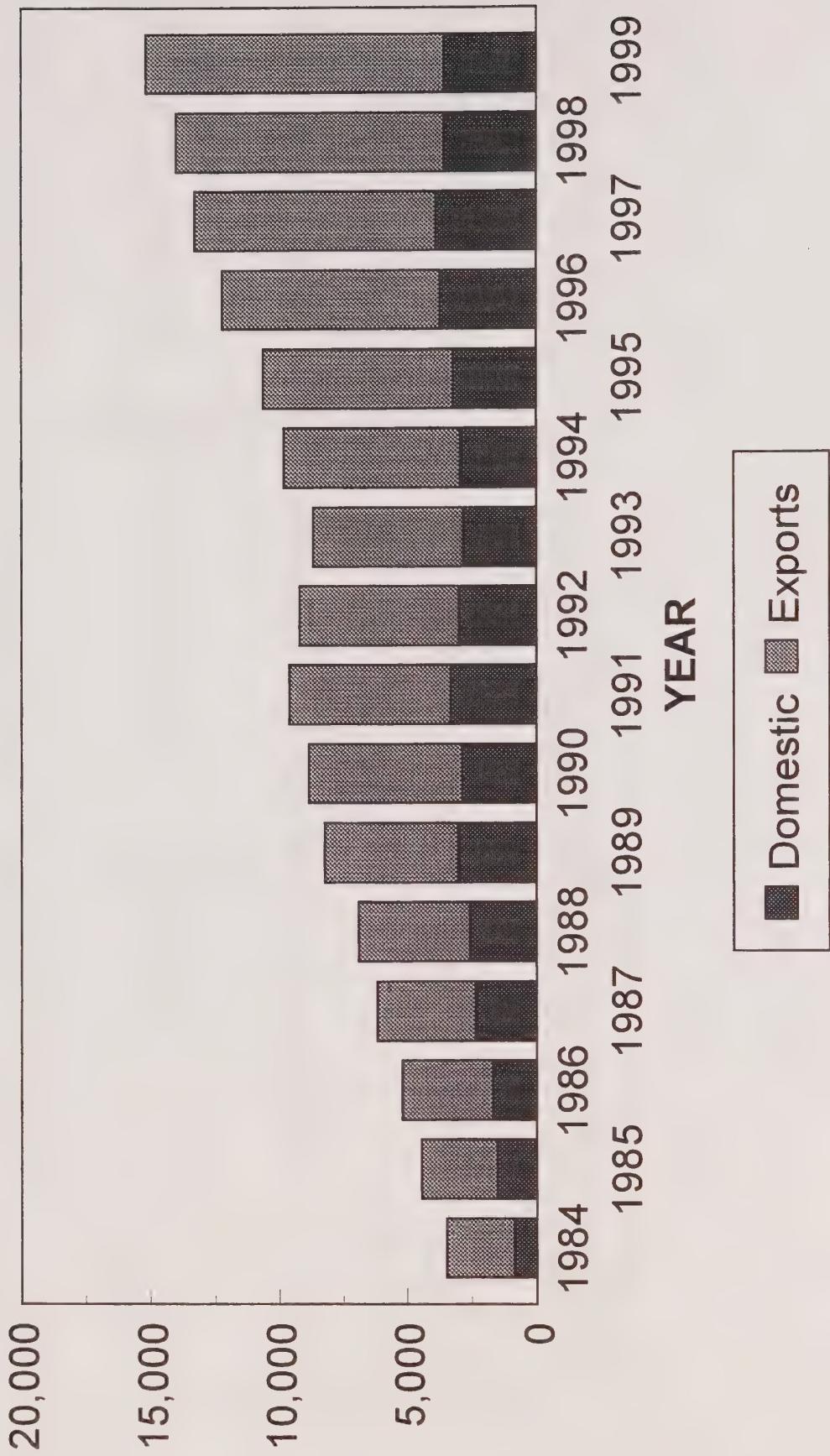
<b>Annual Growth Rates</b>				
Fiscal Year	Canada	USA	Other Foreign	Total
1985	76%	19%	-7%	27%
1986	11%	12%	45%	17%
1987	37%	15%	-1%	19%
1988	11%	7%	28%	12%
1989	17%	14%	35%	19%
1990	-5%	8%	27%	7%
1991	16%	3%	8%	8%
1992	-10%	-1%	-2%	-4%
1993	-6%	-11%	3%	-6%
1994	4%	5%	34%	13%
1995*	10%	9%	6%	8%
1996*	16%	15%	14%	15%
1997*	5%	10%	11%	9%
1998*	-8%	10%	12%	5%
1999*	0.1%	15%	7%	8%

<b>Compound Annual Average Rate of Growth</b>				
Fiscal Year	Canada	USA	Other Foreign	Total
1984-1991	21%	11%	18%	16%
1991-1993	-8%	-6%	1%	-5%
1994-1999	4%	12%	10%	9%

Years with \* are Forecast

# DOMESTIC VS EXPORT SALES

\$MILLIONS



Domestic vs Export Sales (\$ Millions)			
Fiscal Year	Domestic	Exports	Total

Fiscal Year	Domestic	Exports	Total
1984	871	2611	3482
1985	1535	2903	4438
1986	1701	3496	5197
1987	2325	3858	6183
1988	2570	4332	6902
1989	3001	5229	8230
1990	2851	5993	8844
1991	3301	6291	9592
1992	2978	6218	9196
1993	2807	5876	8683
1994	2921	6899	9820
1995*	3203	7417	10620
1996*	3703	8492	12195
1997*	3870	9403	13273
1998*	3560	10432	13992
1999*	3562	11601	15163

Percentage of Total Sales			
Fiscal Year	Domestic	Exports	Total

Fiscal Year	Domestic	Exports	Total
1984	25%	75%	100%
1985	35%	65%	100%
1986	33%	67%	100%
1987	38%	62%	100%
1988	37%	63%	100%
1989	36%	64%	100%
1990	32%	68%	100%
1991	34%	66%	100%
1992	32%	68%	100%
1993	32%	68%	100%
1994	30%	70%	100%
1995*	30%	70%	100%
1996*	30%	70%	100%
1997*	29%	71%	100%
1998*	25%	75%	100%
1999*	23%	77%	100%

Annual Growth Rates			
Fiscal Year	Domestic	Exports	Total

Fiscal Year	Domestic	Exports	Total
1985	76%	11%	27%
1986	11%	20%	17%
1987	37%	10%	19%
1988	11%	12%	12%
1989	17%	21%	19%
1990	-5%	15%	7%
1991	16%	5%	8%
1992	-10%	-1%	-4%
1993	-6%	-6%	-6%
1994	4%	17%	13%
1995*	10%	8%	8%
1996*	16%	14%	15%
1997*	5%	11%	9%
1998*	-8%	11%	5%
1999*	0%	11%	8%

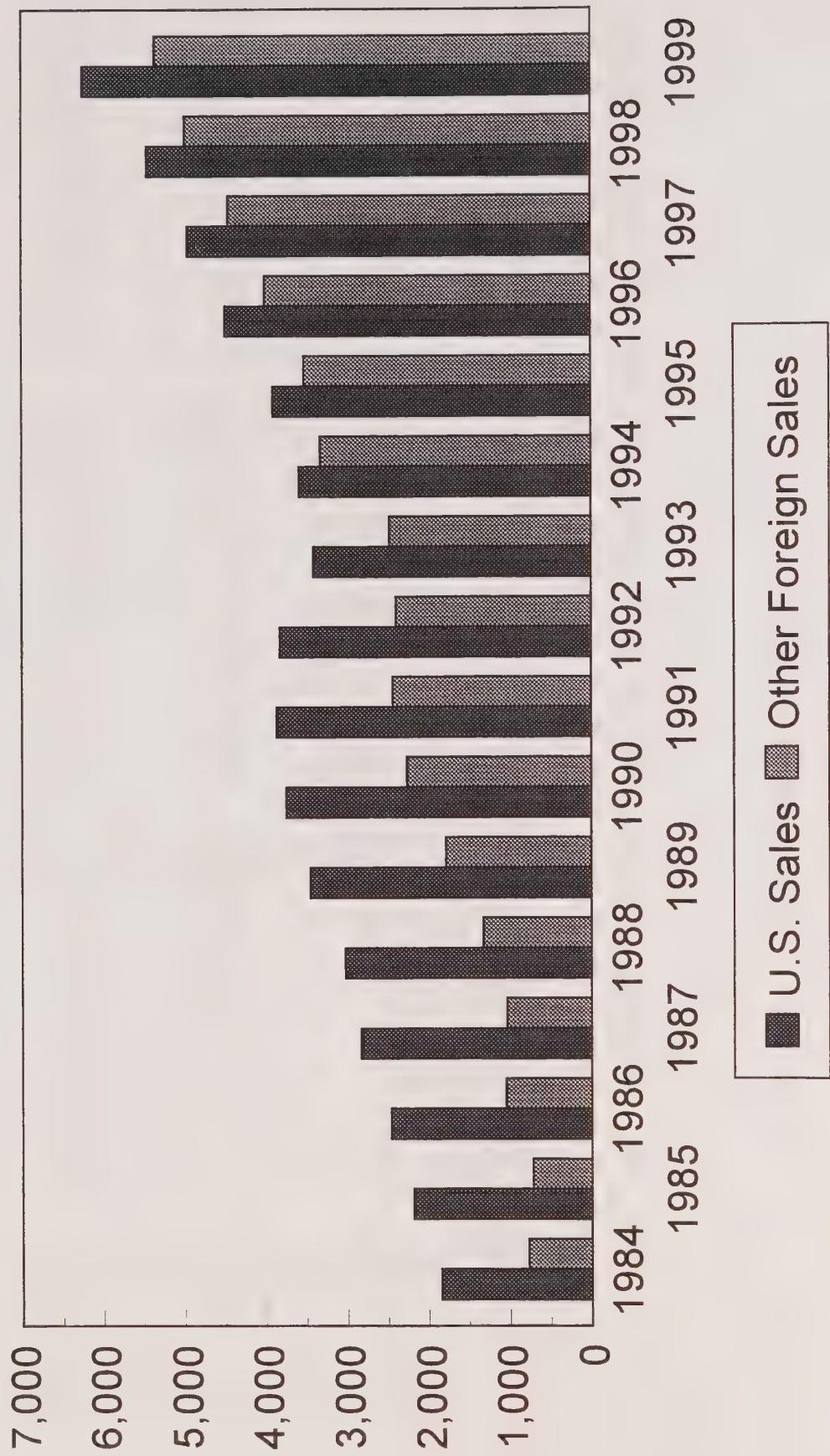
Compound Annual Average Rate of Growth			
Fiscal Year	Domestic	Exports	Total

1984-1991	21%	13%	16%
1991-1993	-8%	-3%	-5%
1994-1999	4%	11%	9%

Years with * are Forecast
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# DESTINATION OF EXPORT SALES

\$ Millions



Destination of Export Sales (\$ Millions)			
Fiscal Year	USA	Other Foreign	Total
1984	1839	772	2611
1985	2185	718	2903
1986	2455	1041	3496
1987	2827	1031	3858
1988	3016	1316	4332
1989	3449	1779	5228
1990	3740	2253	5993
1991	3860	2431	6291
1992	3824	2393	6217
1993	3406	2470	5876
1994	3580	3319	6899
1995*	3903	3520	7423
1996*	4496	4000	8496
1997*	4954	4449	9403
1998*	5448	4984	10432
1999*	6247	5354	11601

Percentage of Total Export Sales			
Fiscal Year	USA	Other Foreign	Total
1984	70%	30%	100%
1985	75%	25%	100%
1986	70%	30%	100%
1987	73%	27%	100%
1988	70%	30%	100%
1989	66%	34%	100%
1990	62%	38%	100%
1991	61%	39%	100%
1992	62%	38%	100%
1993	58%	42%	100%
1994	52%	48%	100%
1995*	53%	47%	100%
1996*	53%	47%	100%
1997*	53%	47%	100%
1998*	52%	48%	100%
1999*	54%	46%	100%

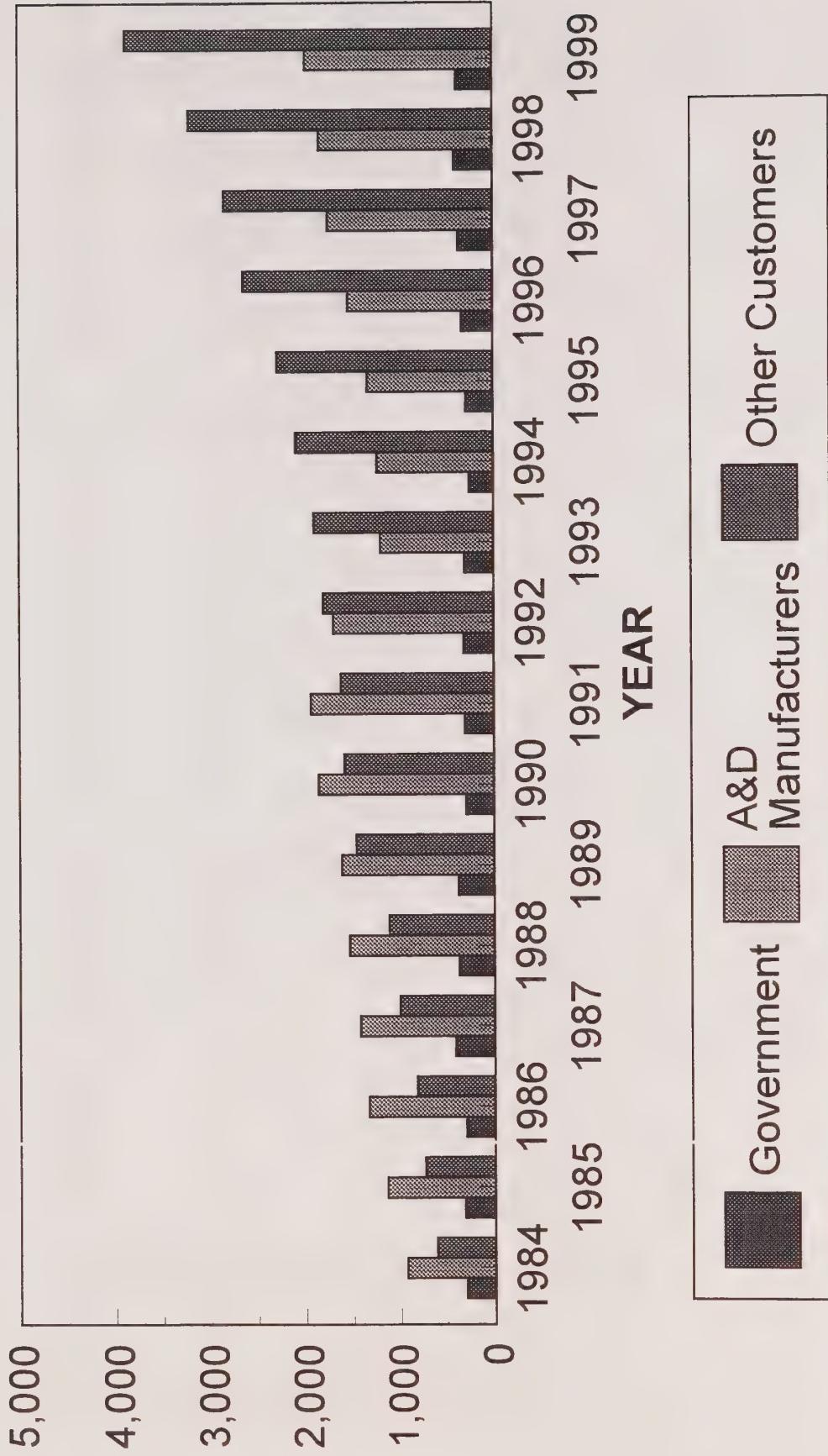
Annual Growth Rates			
Fiscal Year	USA	Other Foreign	Total
1985	19%	-7%	-11%
1986	12%	45%	-20%
1987	15%	-1%	-10%
1988	7%	28%	-12%
1989	14%	35%	-21%
1990	8%	27%	-15%
1991	3%	8%	-5%
1992	-1%	-2%	1%
1993	-11%	3%	5%
1994	5%	34%	-17%
1995*	9%	6%	-8%
1996*	15%	14%	-14%
1997*	10%	11%	-11%
1998*	10%	12%	-11%
1999*	15%	7%	-11%

Compound Annual Average Rate of Growth			
Fiscal Year	USA	Other Foreign	Total
1984-1991	11%	18%	13%
1991-1993	-6%	1%	-3%
1994-1999	12%	10%	11%

Years with \* are Forecast

# SALES TO UNITED STATES

\$ Millions



Sales to US (\$ Millions)				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1984	299	926	614	1839
1985	317	1134	734	2185
1986	303	1330	821	2454
1987	409	1418	1001	2828
1988	372	1532	1112	3016
1989	374	1616	1459	3449
1990	296	1857	1587	3740
1991	306	1937	1618	3861
1992	316	1702	1806	3824
1993	306	1201	1899	3406
1994	257	1231	2092	3580
1995*	292	1331	2279	3902
1996*	328	1531	2637	4496
1997*	366	1748	2840	4954
1998*	407	1836	3205	5448
1999*	384	1981	3881	6246

Percentage of Total Sales to U.S.				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1984	16%	50%	33%	100%
1985	15%	52%	34%	100%
1986	12%	54%	33%	100%
1987	14%	50%	35%	100%
1988	12%	51%	37%	100%
1989	11%	47%	42%	100%
1990	8%	50%	42%	100%
1991	8%	50%	42%	100%
1992	8%	45%	47%	100%
1993	9%	35%	56%	100%
1994	7%	34%	58%	100%
1995*	7%	34%	58%	100%
1996*	7%	34%	59%	100%
1997*	7%	35%	57%	100%
1998*	7%	34%	59%	100%
1999*	6%	32%	62%	100%

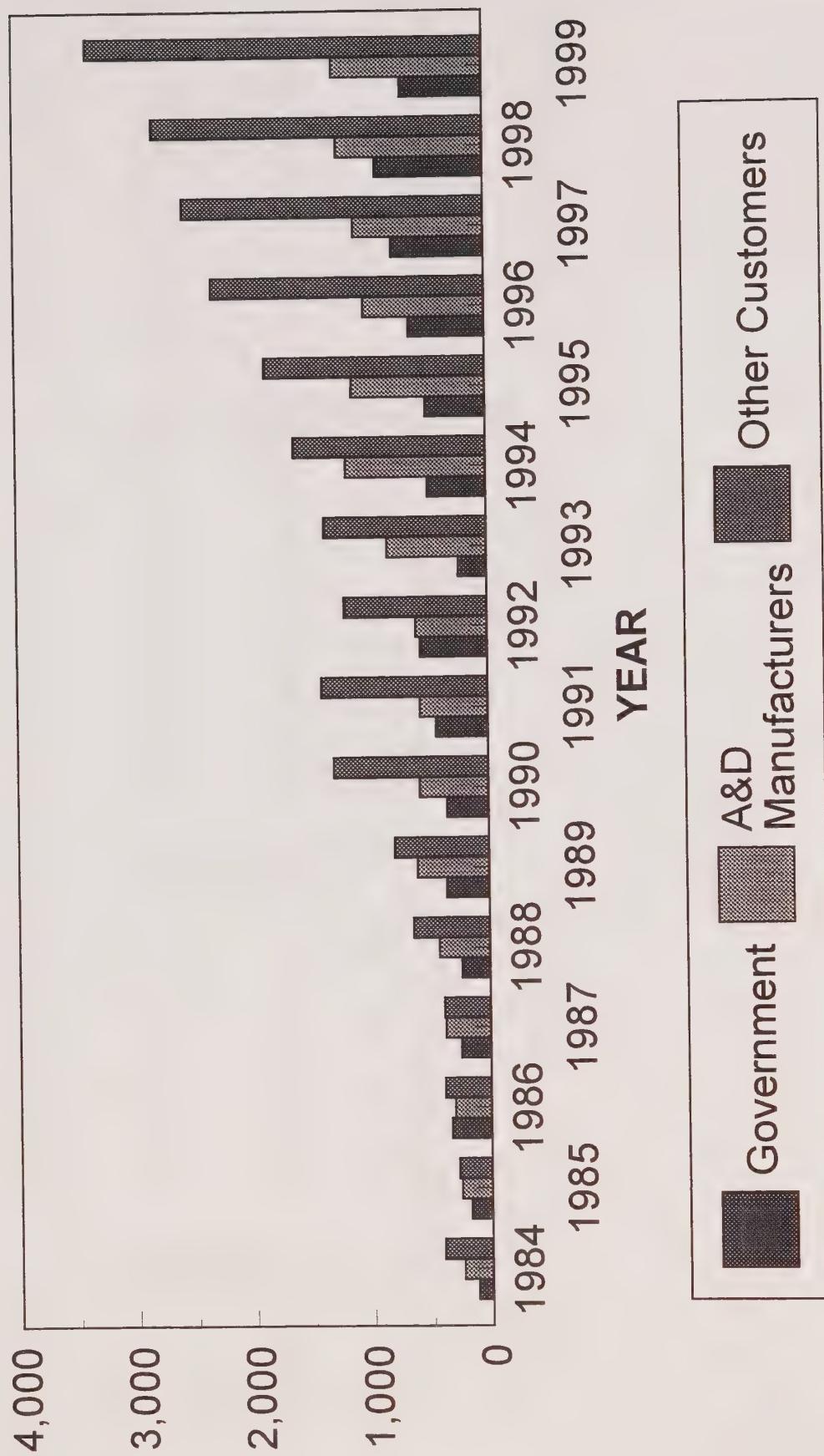
Annual Growth Rates				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1985	6%	22%	20%	19%
1986	-4%	17%	12%	12%
1987	35%	7%	22%	15%
1988	-9%	8%	11%	7%
1989	1%	5%	31%	14%
1990	-21%	15%	9%	8%
1991	3%	4%	2%	3%
1992	3%	-12%	12%	-1%
1993	-3%	-29%	5%	-11%
1994	-16%	2%	10%	5%
1995*	14%	8%	9%	9%
1996*	12%	15%	16%	15%
1997*	12%	14%	8%	10%
1998*	11%	5%	13%	10%
1999*	-6%	8%	21%	15%

Compound Annual Average Rate of Growth				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1984-1991	0%	11%	15%	11%
1991-1993	0%	-21%	8%	-6%
1994-1999	8%	10%	13%	12%

Years with \* are Forecast

# FOREIGN SALES (EXCLUDING U.S.)

\$ Millions



Sales to Other Foreign Customers ( excl. U.S.) (\$ Millions)				
Fiscal Year	Governments	A&D Companies	Other Customers	Total

Fiscal Year	Governments	A&D Companies	Other Customers	Total
1984	122	242	408	772
1985	176	261	280	718
1986	338	310	393	1041
1987	253	386	391	1031
1988	242	429	646	1316
1989	365	610	804	1779
1990	354	589	1310	2253
1991	445	577	1409	2431
1992	572	611	1211	2393
1993	245	847	1378	2470
1994	500	1188	1631	3319
1995*	512	1134	1874	3520
1996*	648	1028	2324	4000
1997*	782	1106	2561	4449
1998*	919	1247	2817	4984
1999*	701	1276	3376	5354

Percentage of Total Other Foreign Sales				
Fiscal Year	Governments	A&D Companies	Other Customers	Total

Fiscal Year	Governments	A&D Companies	Other Customers	Total
1984	16%	31%	53%	100%
1985	25%	36%	39%	100%
1986	32%	30%	38%	100%
1987	25%	37%	38%	100%
1988	18%	33%	49%	100%
1989	21%	34%	45%	100%
1990	16%	26%	58%	100%
1991	18%	24%	58%	100%
1992	24%	26%	51%	100%
1993	10%	34%	56%	100%
1994	15%	36%	49%	100%
1995*	15%	32%	53%	100%
1996*	16%	26%	58%	100%
1997*	18%	25%	58%	100%
1998*	18%	25%	57%	100%
1999*	13%	24%	63%	100%

Annual Growth Rates				
Fiscal Year	Governments	A&D Companies	Other Customers	Total

Fiscal Year	Governments	A&D Companies	Other Customers	Total
1985	44%	8%	-31%	-7%
1986	92%	19%	40%	45%
1987	-25%	-25%	-1%	-1%
1988	-4%	11%	65%	28%
1989	51%	42%	24%	35%
1990	-3%	-3%	63%	27%
1991	26%	-2%	8%	8%
1992	29%	6%	-14%	-2%
1993	-57%	39%	14%	3%
1994	104%	40%	18%	34%
1995*	2%	-5%	15%	6%
1996*	27%	-9%	24%	14%
1997*	21%	8%	10%	11%
1998*	18%	13%	10%	12%
1999*	-24%	2%	20%	7%

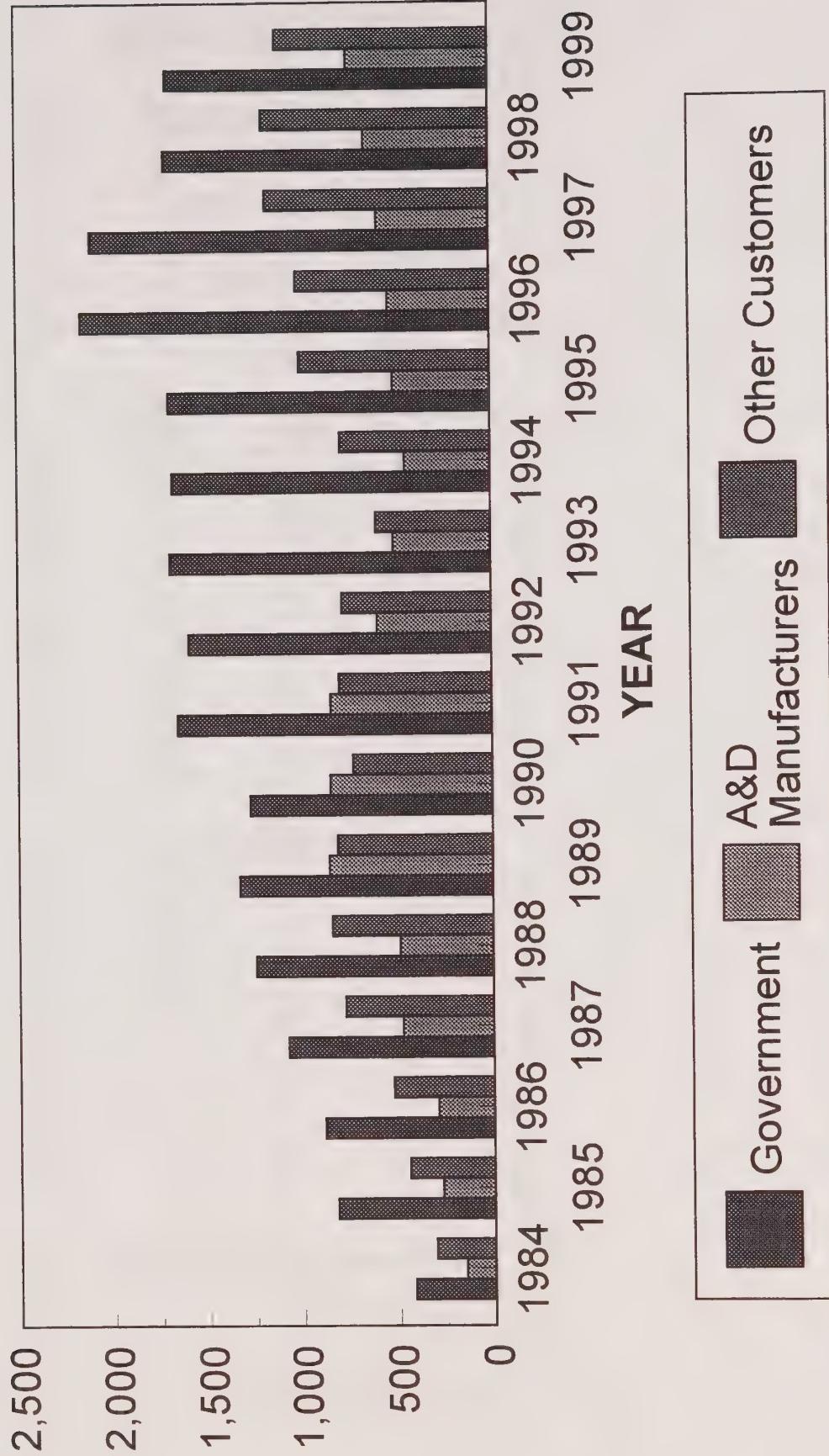
Compound Annual Average Rate of Growth				
Fiscal Year	Governments	A&D Companies	Other Customers	Total

Fiscal Year	Governments	A&D Companies	Other Customers	Total
1984-1991	20%	13%	19%	18%
1991-1993	-26%	21%	-1%	1%
1994-1999	7%	1%	16%	10%

Years with * are Forecast
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# DOMESTIC SALES

\$ Millions



Sales to Domestic Customers (\$ Millions)				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1984	417	150	305	872
1985	820	272	443	1535
1986	884	292	525	1701
1987	1074	475	776	2325
1988	1244	486	840	2570
1989	1331	857	812	3000
1990	1272	851	729	2852
1991	1656	846	800	3302
1992	1595	600	783	2978
1993	1693	512	602	2807
1994	1680	450	790	2920
1995*	1695	509	1000	3204
1996*	2157	534	1013	3704
1997*	2106	587	1176	3869
1998*	1714	654	1193	3561
1999*	1702	743	1117	3562

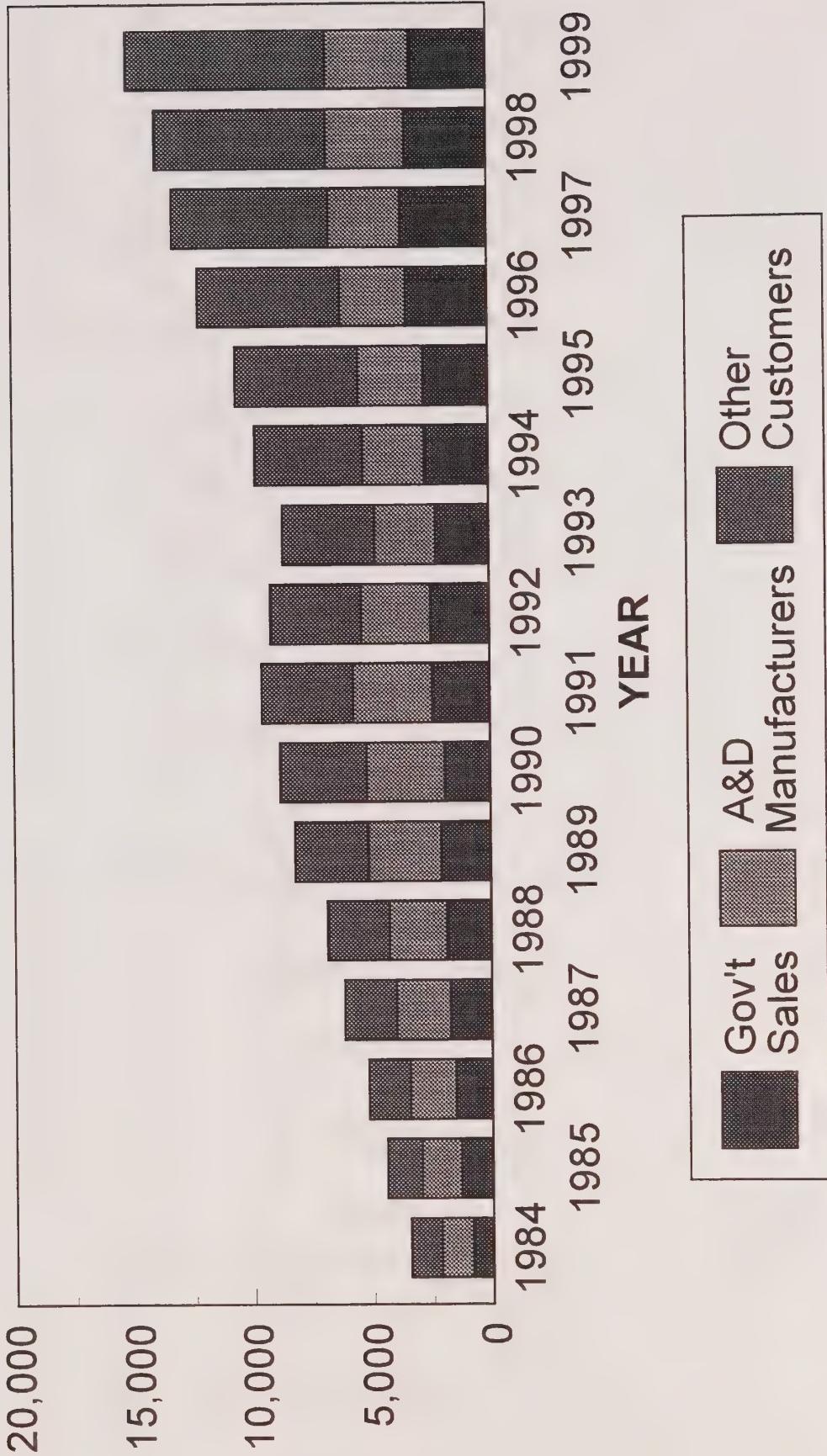
Percentage of Total Canadian Sales				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1984	48%	17%	35%	100%
1985	53%	18%	29%	100%
1986	52%	17%	31%	100%
1987	46%	20%	33%	100%
1988	48%	19%	33%	100%
1989	44%	29%	27%	100%
1990	45%	30%	26%	100%
1991	50%	26%	24%	100%
1992	54%	20%	26%	100%
1993	60%	18%	21%	100%
1994	58%	15%	27%	100%
1995*	53%	16%	31%	100%
1996*	58%	14%	27%	100%
1997*	54%	15%	30%	100%
1998*	48%	18%	34%	100%
1999*	48%	21%	31%	100%

Annual Growth Rates				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1985	97%	81%	45%	76%
1986	8%	7%	19%	11%
1987	21%	63%	48%	37%
1988	16%	2%	8%	11%
1989	7%	76%	-3%	17%
1990	-4%	-1%	-10%	-5%
1991	30%	-1%	10%	16%
1992	-4%	-29%	-2%	-10%
1993	6%	-15%	-23%	-6%
1994	-1%	-12%	31%	4%
1995*	1%	13%	27%	10%
1996*	27%	5%	1%	16%
1997*	-2%	10%	16%	4%
1998*	-19%	11%	1%	-8%
1999*	-1%	14%	-6%	0%

Compound Annual Average Rate of Growth				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1984-1991	22%	28%	15%	21%
1991-1993	1%	-22%	-13%	-8%
1994-1999	0%	11%	7%	4%

Years with \* are Forecast

# SALES BY CUSTOMER CATEGORY \$ MILLIONS



Total Sales by Customer (\$ Millions)				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1984	837	1318	1327	3482
1985	1314	1666	1457	4437
1986	1526	1933	1739	5198
1987	1736	2279	2168	6183
1988	1857	2447	2598	6902
1989	2071	3083	3076	8230
1990	1921	3297	3626	8844
1991	2407	3359	3826	9592
1992	2482	2914	3799	9195
1993	2244	2559	3879	8682
1994	2671	2635	4514	9820
1995*	2731	2741	5154	10626
1996*	3437	2788	5975	12200
1997*	3634	3062	6577	13273
1998*	3461	3316	7215	13992
1999*	3232	3556	8375	15163

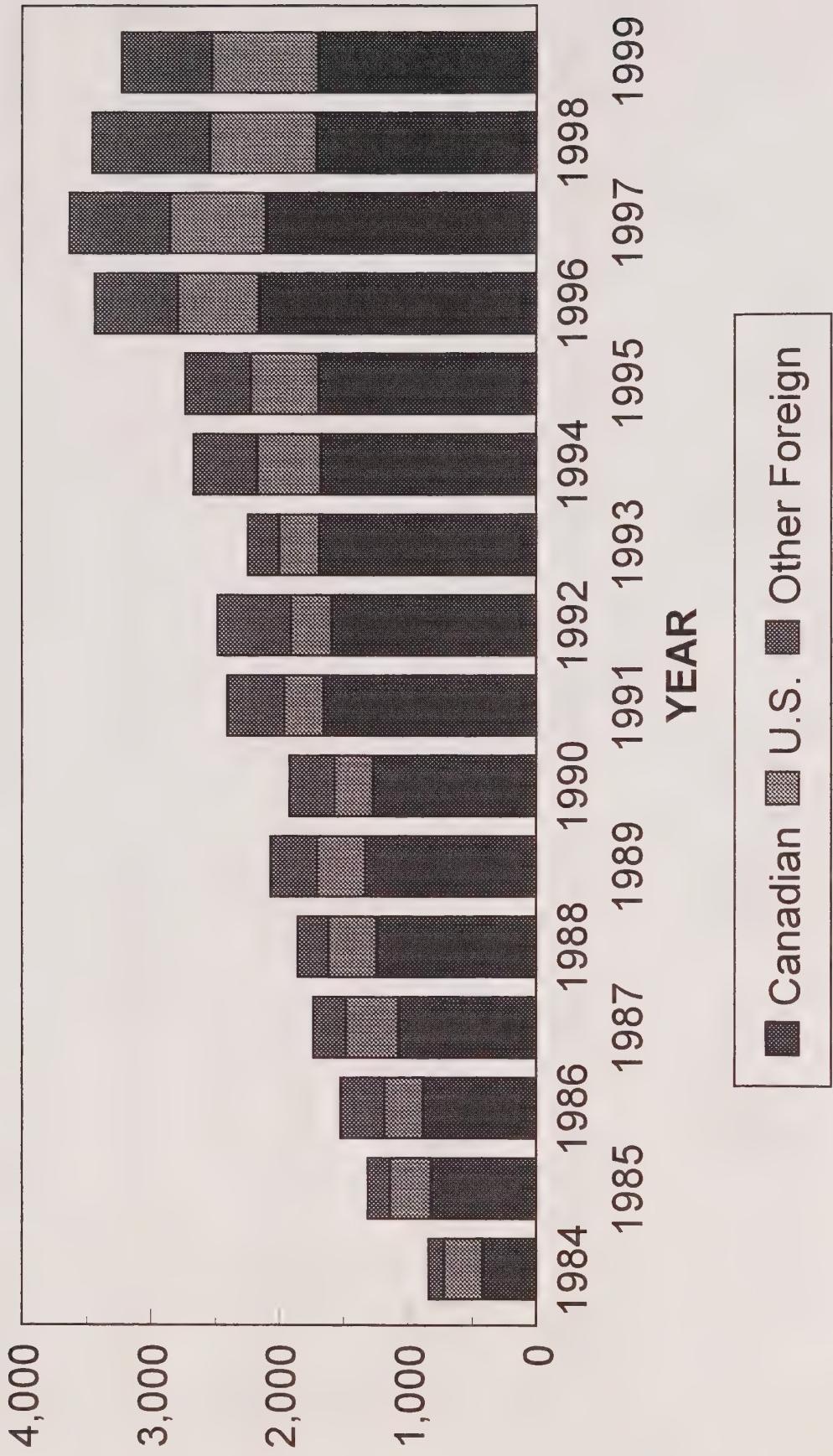
Percentage of Sales to Customer				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1984	24%	38%	38%	100%
1985	30%	38%	33%	100%
1986	29%	37%	33%	100%
1987	28%	37%	35%	100%
1988	27%	35%	38%	100%
1989	25%	37%	37%	100%
1990	22%	37%	41%	100%
1991	25%	35%	40%	100%
1992	27%	32%	41%	100%
1993	26%	29%	45%	100%
1994	27%	27%	46%	100%
1995*	26%	26%	49%	100%
1996*	28%	23%	49%	100%
1997*	27%	23%	50%	100%
1998*	25%	24%	52%	100%
1999*	21%	23%	55%	100%

Annual Growth Rates				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1985	57%	26%	10%	27%
1986	16%	16%	19%	17%
1987	14%	18%	25%	19%
1988	7%	7%	20%	12%
1989	12%	26%	18%	19%
1990	-7%	7%	18%	7%
1991	25%	2%	6%	8%
1992	3%	-13%	-1%	-4%
1993	-10%	-12%	2%	-6%
1994	19%	3%	16%	13%
1995*	2%	4%	14%	8%
1996*	26%	2%	16%	15%
1997*	6%	10%	10%	9%
1998*	-5%	8%	10%	5%
1999*	-7%	7%	16%	8%

Compound Annual Growth Rates %				
Fiscal Year	Government	A&D Companies	Other Customers	Total
1984-1991	16%	14%	16%	16%
1991-1993	-3%	-13%	1%	-5%
1994-1999	4%	6%	13%	9%

Years with \* are Forecast

# SALES TO GOVERNMENTS \$ MILLIONS



Sales To Governments (\$ Millions)				
Fiscal Year	Canadian	U.S.	Other Foreign	Total
1984	417	299	122	838
1985	820	317	176	1313
1986	884	303	338	1525
1987	1074	409	253	1736
1988	1244	372	242	1858
1989	1331	374	365	2070
1990	1272	296	354	1922
1991	1656	306	445	2407
1992	1595	316	572	2483
1993	1693	306	245	2244
1994	1680	257	500	2437
1995*	1695	292	512	2499
1996*	2157	328	648	3133
1997*	2106	366	782	3254
1998*	1714	407	919	3040
1999*	1702	384	701	2787

Percentage of Total Sales				
Fiscal Year	Canadian	U.S.	Other Foreign	Total
1984	50%	36%	15%	100%
1985	62%	24%	13%	100%
1986	58%	20%	22%	100%
1987	62%	24%	15%	100%
1988	67%	20%	13%	100%
1989	64%	18%	18%	100%
1990	66%	15%	18%	100%
1991	69%	13%	18%	100%
1992	64%	13%	23%	100%
1993	75%	14%	11%	100%
1994	69%	11%	21%	100%
1995*	68%	12%	20%	100%
1996*	69%	10%	21%	100%
1997*	65%	11%	24%	100%
1998*	56%	13%	30%	100%
1999*	61%	14%	25%	100%

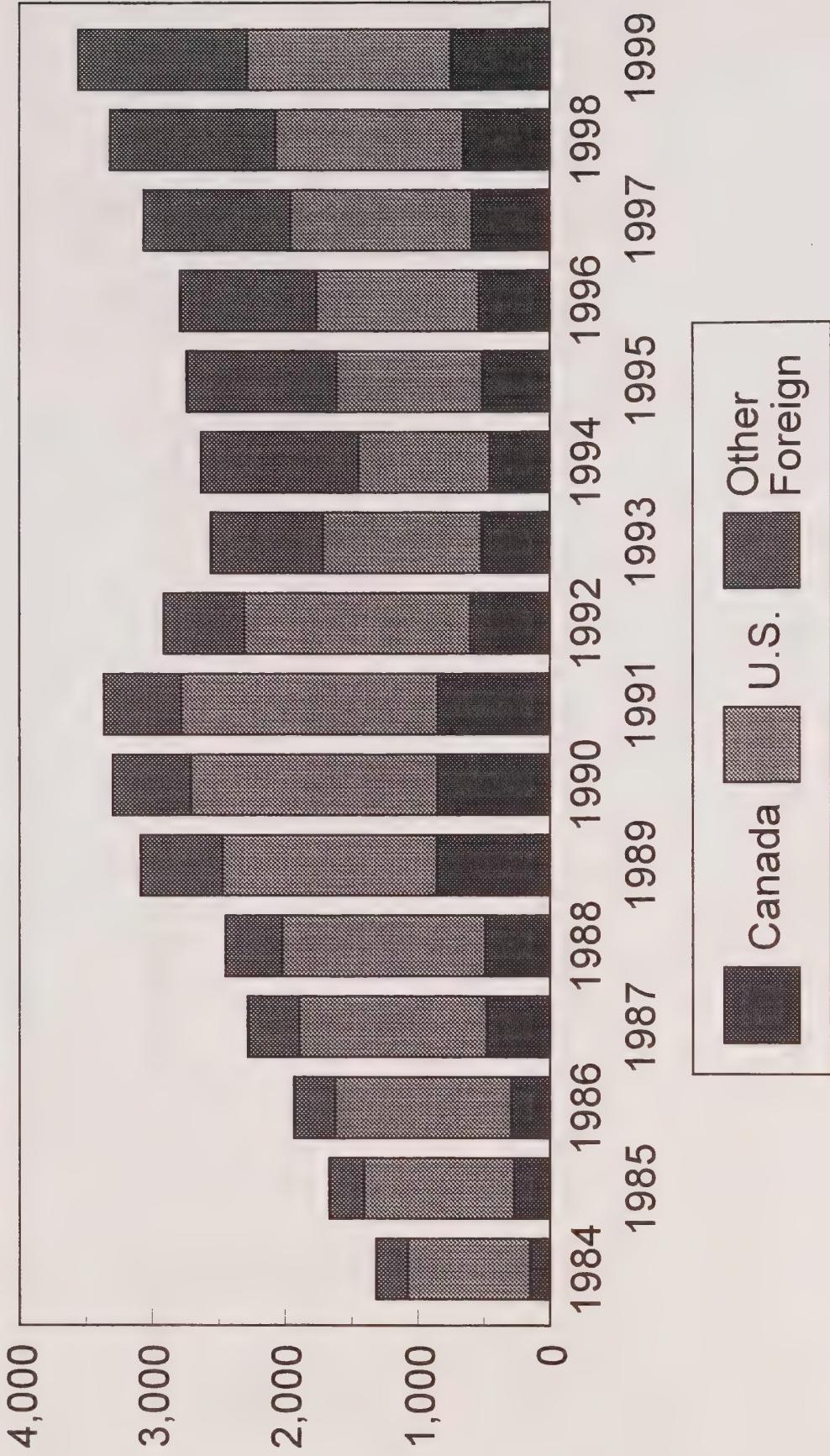
Annual Growth Rates				
Fiscal Year	Canadian	U.S.	Other Foreign	Total
1985	97%	6%	44%	57%
1986	8%	-4%	92%	16%
1987	21%	35%	-25%	14%
1988	16%	-9%	-4%	7%
1989	7%	1%	51%	11%
1990	-4%	-21%	-3%	-7%
1991	30%	3%	26%	25%
1992	-4%	3%	29%	3%
1993	6%	-3%	-57%	-10%
1994	-1%	-16%	104%	9%
1995*	1%	14%	2%	3%
1996*	27%	12%	27%	25%
1997*	-2%	12%	21%	4%
1998*	-19%	11%	18%	-7%
1999*	-1%	-6%	-24%	-8%

Compound Average Annual Rate of Growth				
Fiscal Year	Canadian	U.S.	Other Foreign	Total
1984-1991	22%	0%	20%	16%
1991-1993	1%	0%	-26%	-3%
1994-1999	0%	8%	7%	3%

Years with \* are Forecast

# SALES TO AEROSPACE & DEFENCE MANUFACTURERS

\$MILLIONS



Sales to Aerospace & Defence Manufacturers (\$ Millions)				
Fiscal Year	Canadian	U.S.	Other Foreign	
			excl. U.S.A	TOTAL

Fiscal Year	Canadian	U.S.	Other Foreign excl. U.S.A	TOTAL
1984	150	926	242	1318
1985	272	1134	261	1667
1986	292	1330	310	1932
1987	475	1418	386	2279
1988	486	1532	429	2447
1989	857	1616	610	3083
1990	851	1857	589	3297
1991	846	1937	577	3360
1992	600	1702	611	2913
1993	512	1201	847	2560
1994	450	997	1188	2635
1995*	509	1098	1134	2741
1996*	534	1227	1028	2789
1997*	587	1368	1106	3061
1998*	654	1415	1247	3316
1999*	743	1537	1276	3556

Percentage of Total A&D Sales				
Fiscal Year	Canadian	U.S.	Other Foreign	
			excl. U.S.A	TOTAL

Fiscal Year	Canadian	U.S.	Other Foreign excl. U.S.A	TOTAL
1984	11%	70%	18%	100%
1985	16%	68%	16%	100%
1986	15%	69%	16%	100%
1987	21%	62%	17%	100%
1988	20%	63%	18%	100%
1989	28%	52%	20%	100%
1990	26%	56%	18%	100%
1991	25%	58%	17%	100%
1992	21%	58%	21%	100%
1993	20%	47%	33%	100%
1994	17%	38%	45%	100%
1995*	19%	40%	41%	100%
1996*	19%	44%	37%	100%
1997*	19%	45%	36%	100%
1998*	20%	43%	38%	100%
1999*	21%	43%	36%	100%

Annual Growth Rates				
Fiscal Year	Canadian	U.S.	Other Foreign	
			excl. U.S.A	TOTAL

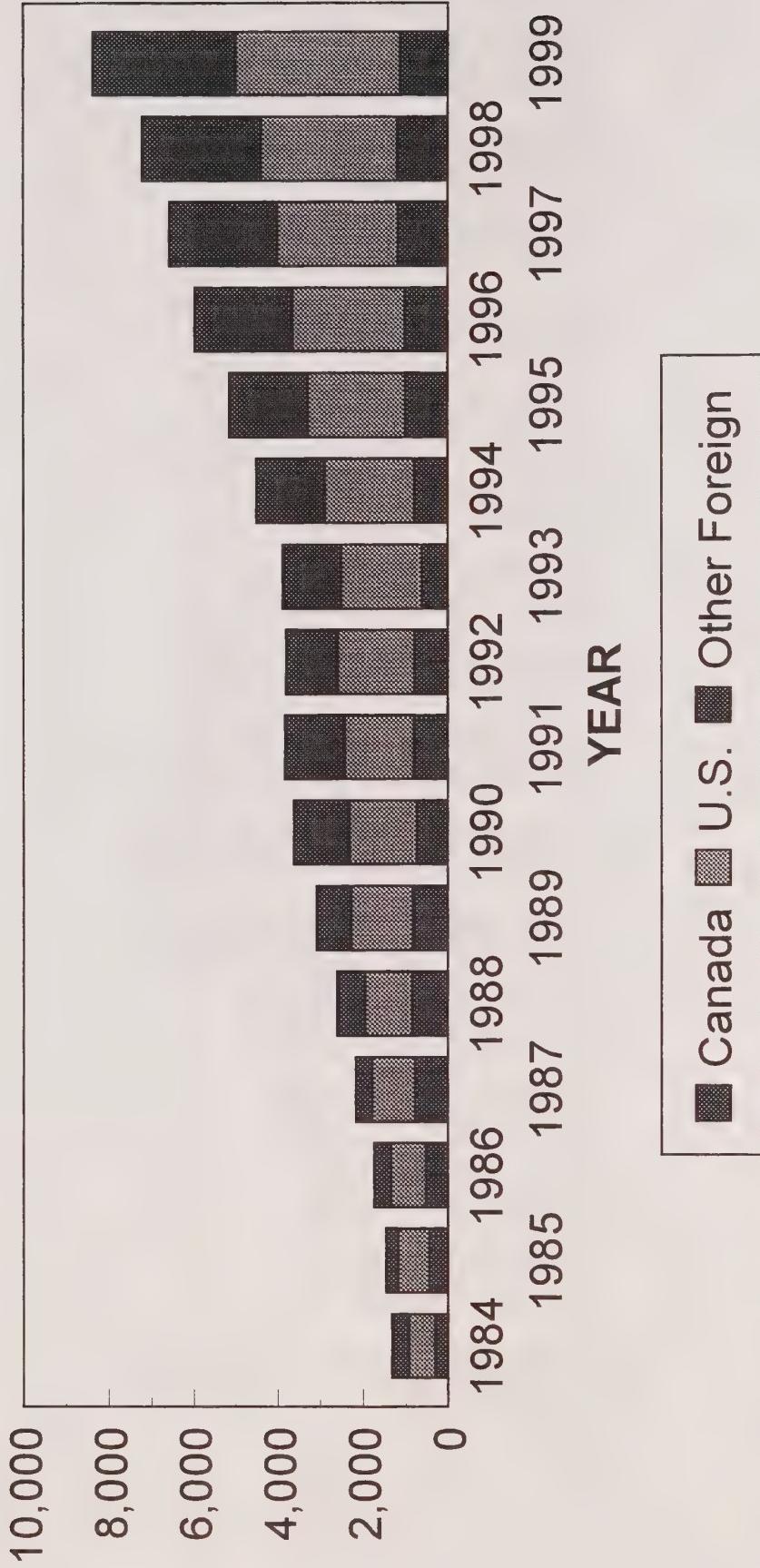
Fiscal Year	Canadian	U.S.	Other Foreign excl. U.S.A	TOTAL
1985	81%	22%	8%	26%
1986	7%	17%	19%	16%
1987	63%	7%	25%	18%
1988	2%	8%	11%	7%
1989	76%	5%	42%	26%
1990	-1%	15%	-3%	7%
1991	-1%	4%	-2%	2%
1992	-29%	-12%	6%	-13%
1993	-15%	-29%	39%	-12%
1994	-12%	-17%	40%	3%
1995*	13%	10%	-5%	4%
1996*	5%	12%	-9%	2%
1997*	10%	11%	8%	10%
1998*	11%	3%	13%	8%
1999*	14%	9%	2%	7%

Compound Annual Average Rate of Growth				
Fiscal Year	Canadian	U.S.	Other Foreign	
			excl. U.S.A	TOTAL

Fiscal Year	Canadian	U.S.	Other Foreign excl. U.S.A	TOTAL
1984-1991	28%	11%	13%	14%
1991-1993	-22%	-21%	21%	-13%
1994-1999	11%	9%	1%	6%

Years with * are Forecast
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# SALES TO OTHER CUSTOMERS \$ MILLIONS\*



\*Sales Other Than to Governments or  
Aerospace and Defence Manufacturers  
(Mainly Airlines)

Sales to Other Customers (\$ Millions)				
(excluding governments & Aerospace & Defence manufacturers)				
Fiscal Year	Canadian	U.S.	Foreign	Total
1984	305	614	408	1327
1985	443	734	280	1457
1986	525	821	393	1739
1987	776	1001	391	2168
1988	840	1112	646	2598
1989	812	1459	804	3075
1990	729	1587	1310	3626
1991	800	1618	1409	3827
1992	783	1806	1211	3800
1993	602	1899	1378	3879
1994	790	2092	1631	4513
1995*	1000	2279	1874	5153
1996*	1013	2637	2324	5974
1997*	1176	2840	2561	6577
1998*	1193	3205	2817	7215
1999*	1117	3881	3376	8374

Percentage of Total Other Sales				
Fiscal Year	Canadian	U.S.	Foreign	Total
1984	23%	46%	31%	100%
1985	30%	50%	19%	100%
1986	30%	47%	23%	100%
1987	36%	46%	18%	100%
1988	32%	43%	25%	100%
1989	26%	47%	26%	100%
1990	20%	44%	36%	100%
1991	21%	42%	37%	100%
1992	21%	48%	32%	100%
1993	16%	49%	36%	100%
1994	18%	46%	36%	100%
1995*	19%	44%	36%	100%
1996*	17%	44%	39%	100%
1997*	18%	43%	39%	100%
1998*	17%	44%	39%	100%
1999*	13%	46%	40%	100%

Annual Growth Rates				
Fiscal Year	Canadian	U.S.	Foreign	Total
1985	45%	20%	-31%	10%
1986	19%	12%	40%	19%
1987	48%	22%	-1%	25%
1988	8%	11%	65%	20%
1989	-3%	31%	24%	18%
1990	-10%	9%	63%	18%
1991	10%	2%	8%	6%
1992	-2%	12%	-14%	-1%
1993	-23%	5%	14%	2%
1994	31%	10%	18%	16%
1995*	27%	9%	15%	14%
1996*	1%	16%	24%	16%
1997*	16%	8%	10%	10%
1998*	1%	13%	10%	10%
1999*	-6%	21%	20%	16%

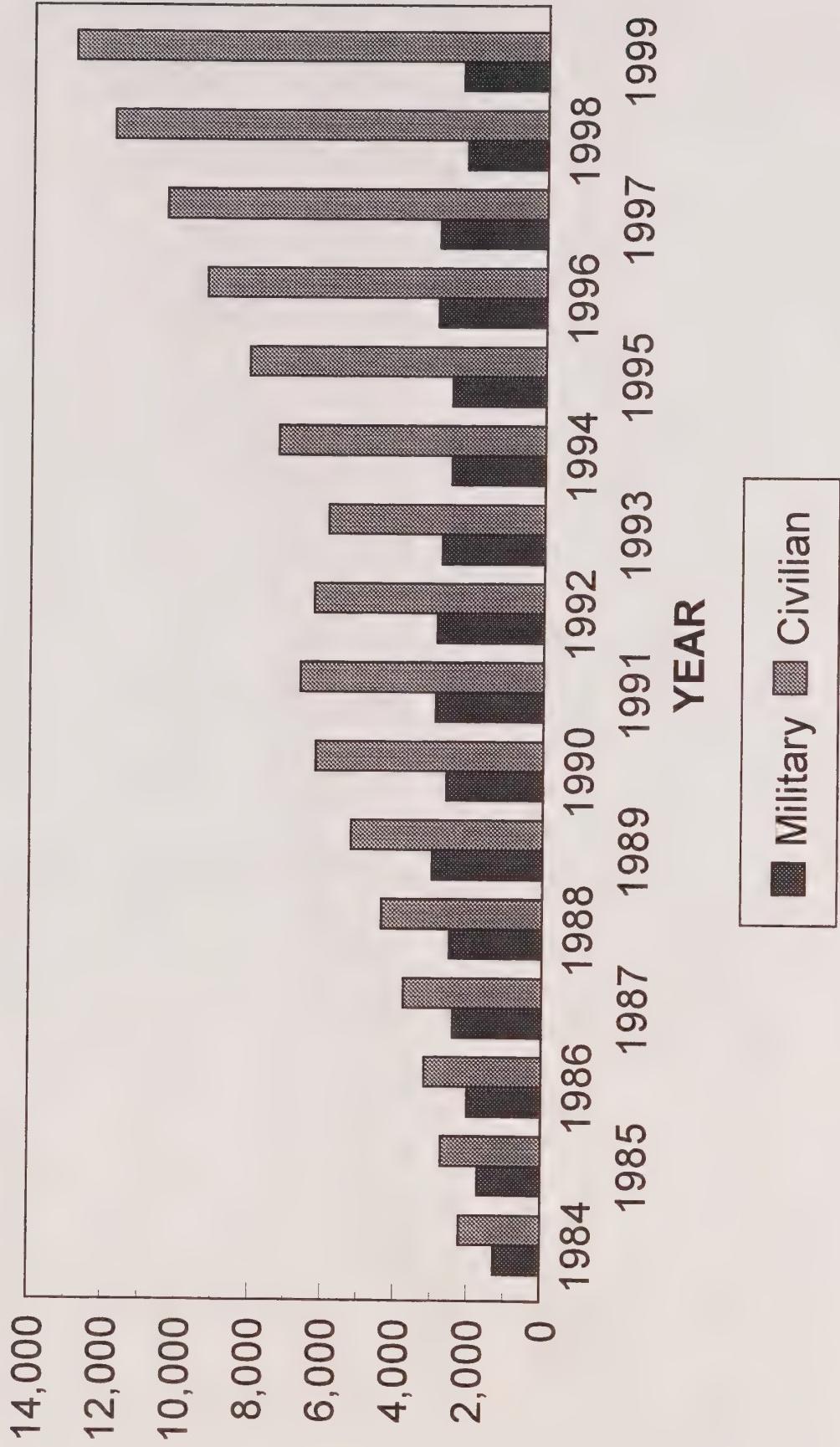
  

Compound Annual Average Rate of Growth				
Fiscal Year	Canadian	U.S.	Foreign	Total
1984-1991	15%	15%	19%	16%
1991-1993	-13%	8%	-1%	1%
1994-1999	7%	13%	16%	13%

Years with \* are Forecast

# SALES TO MILITARY AND CIVILIAN MARKETS

\$ MILLIONS



Sales to Military and Civilian Markets (\$ Millions)			
Fiscal Year	Military	Civilian	Total
1984	1263	2219	3482
1985	1717	2720	4437
1986	2015	3182	5197
1987	2415	3769	6184
1988	2513	4389	6902
1989	3001	5229	8230
1990	2629	6215	8844
1991	2937	6656	9593
1992	2907	6288	9195
1993	2790	5893	8683
1994	2543	7277	9820
1995*	2539	8086	10625
1996*	2941	9258	12199
1997*	2911	10362	13273
1998*	2184	11808	13992
1999*	2297	12866	15163

Percentage of Total Sales			
Fiscal Year	Military	Civilian	Total
1984	36%	64%	100%
1985	39%	61%	100%
1986	39%	61%	100%
1987	39%	61%	100%
1988	36%	64%	100%
1989	36%	64%	100%
1990	30%	70%	100%
1991	31%	69%	100%
1992	32%	68%	100%
1993	32%	68%	100%
1994	26%	74%	100%
1995*	24%	76%	100%
1996*	24%	76%	100%
1997*	22%	78%	100%
1998*	16%	84%	100%
1999*	15%	85%	100%

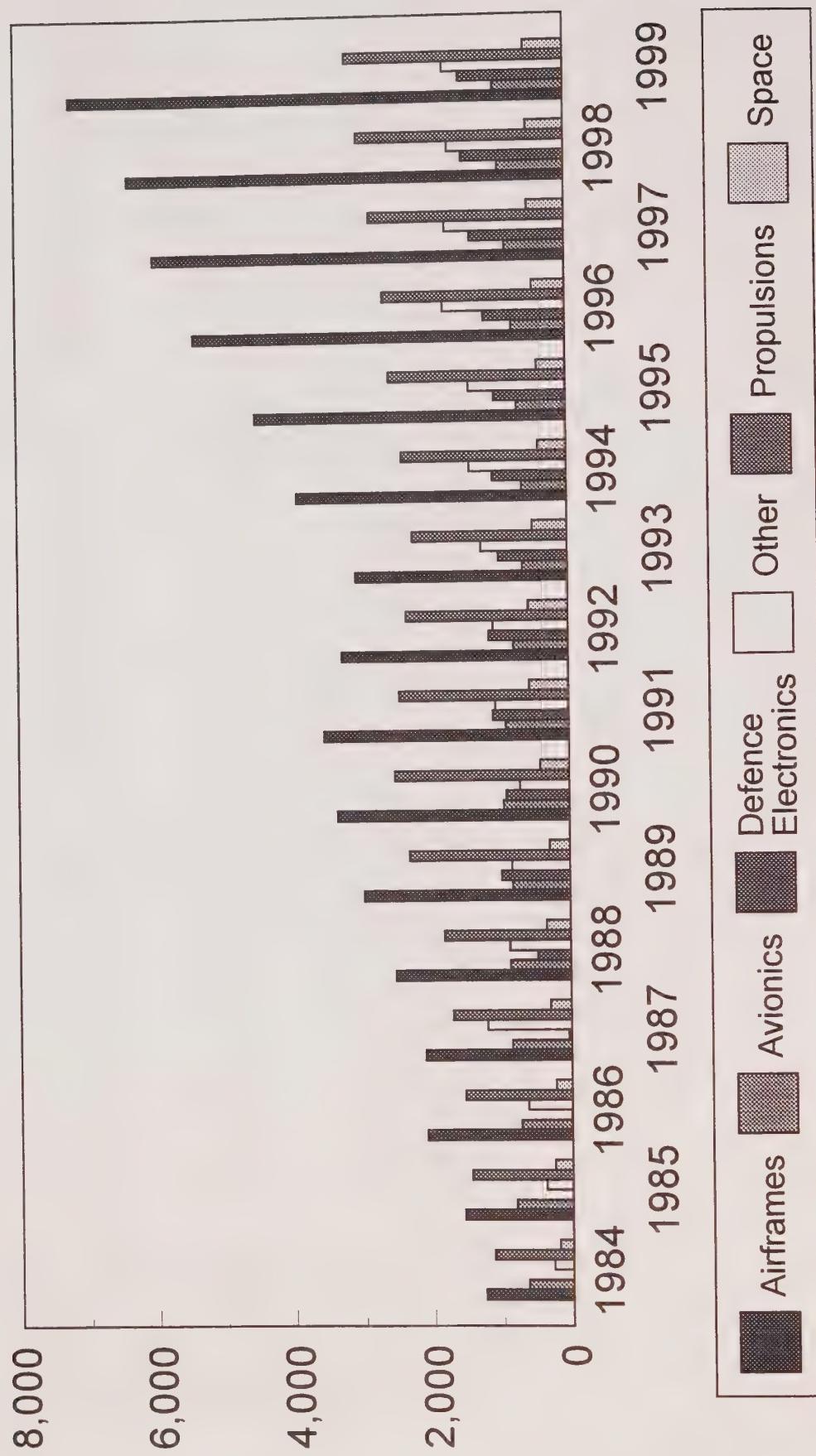
Annual Growth Rates			
Fiscal Year	Military	Civilian	Total
1985	36%	23%	27%
1986	17%	17%	17%
1987	20%	18%	19%
1988	4%	16%	12%
1989	19%	19%	19%
1990	-12%	19%	7%
1991	12%	7%	8%
1992	-1%	-6%	-4%
1993	-4%	-6%	-6%
1994	-9%	23%	13%
1995*	0%	11%	8%
1996*	16%	14%	15%
1997*	-1%	12%	9%
1998*	-25%	14%	5%
1999*	5%	9%	8%

Compound Annual Average Rate of Growth			
Fiscal Year	Military	Civilian	Total
1984-1991	13%	17%	16%
1991-1993	-3%	-6%	-5%
1994-1999	-2%	12%	9%

Years with \* are Forecast

# SALES BY SUB-SECTOR

\$ Millions



Fiscal Year	Sales by Sub-Sector (\$ Millions)						
	Airframes	Avionics	Defence Electronics	Other	Propulsion	Space	Total
1984	1260	638	0	269	1129	186	3482
1985	1548	816	0	376	1450	248	4438
1986	2088	729	1	629	1526	225	5198
1987	2106	848	39	1202	1697	292	6184
1988	2528	866	476	873	1814	344	6902
1989	2971	830	983	839	2319	290	8230
1990	3347	944	906	715	2518	414	8844
1991	3531	910	1086	1058	2446	561	9593
1992	3272	791	1143	1081	2339	570	9196
1993	3058	647	992	1247	2242	497	8683
1994	3901	652	1067	1401	2392	407	9820
1995*	4508	710	1031	1401	2559	416	10626
1996*	5397	771	1170	1761	2635	465	12200
1997*	5976	859	1363	1720	2825	529	13273
1998*	6346	955	1474	1678	2999	540	13992
1999*	7191	1009	1506	1735	3156	565	15163

Fiscal Year	Percentage of Total Sales						
	Airframes	Avionics	Defence Electronics	Other	Propulsion	Space	Total
1984	36%	18%	0%	8%	32%	5%	100%
1985	35%	18%	0%	8%	33%	6%	100%
1986	40%	14%	0%	12%	29%	4%	100%
1987	34%	14%	1%	19%	27%	5%	100%
1988	37%	13%	7%	13%	26%	5%	100%
1989	36%	10%	12%	10%	28%	4%	100%
1990	38%	11%	10%	8%	28%	5%	100%
1991	37%	9%	11%	11%	26%	6%	100%
1992	36%	9%	12%	12%	25%	6%	100%
1993	35%	7%	11%	14%	26%	6%	100%
1994	40%	7%	11%	14%	24%	4%	100%
1995*	42%	7%	10%	13%	24%	4%	100%
1996*	44%	6%	10%	14%	22%	4%	100%
1997*	45%	6%	10%	13%	21%	4%	100%
1998*	45%	7%	11%	12%	21%	4%	100%
1999*	47%	7%	10%	11%	21%	4%	100%

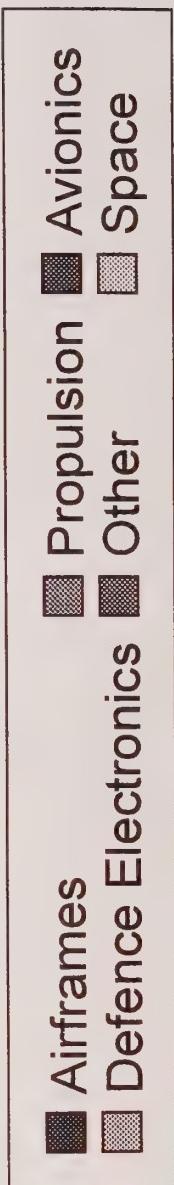
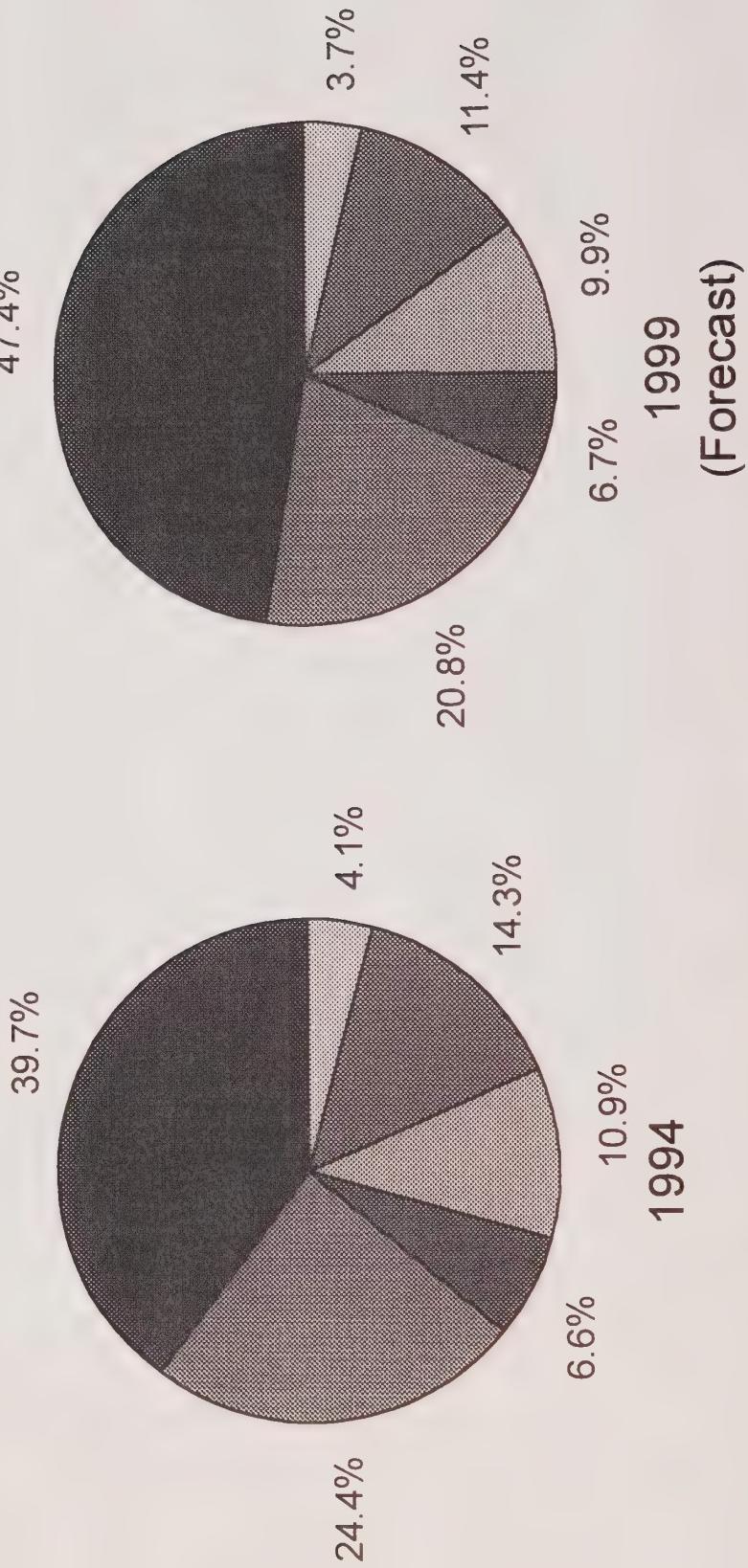
Fiscal Year	Annual Growth Rates						
	Airframes	Avionics	Defence Electronics	Other	Propulsion	Space	Total
1985	23%	28%	NA	40%	28%	33%	27%
1986	35%	-11%	NA	67%	5%	-9%	17%
1987	1%	16%	3801%	91%	11%	30%	19%
1988	20%	2%	1120%	-27%	7%	18%	12%
1989	17%	-4%	106%	-4%	28%	-16%	19%
1990	13%	14%	-8%	-15%	9%	43%	7%
1991	6%	-4%	20%	48%	-3%	36%	8%
1992	-7%	-13%	5%	2%	-4%	2%	-4%
1993	-7%	-18%	-13%	15%	-4%	-13%	-6%
1994	28%	1%	8%	12%	7%	-18%	13%
1995*	16%	9%	-3%	0%	7%	2%	8%
1996*	20%	9%	13%	26%	3%	12%	15%
1997*	11%	11%	16%	-2%	7%	14%	9%
1998*	6%	11%	8%	-2%	6%	2%	5%
1999*	13%	6%	2%	3%	5%	5%	8%

Fiscal Year	Compound Annual Average Rate of Growth						
	Airframes	Avionics	Defence Electronics	Other	Propulsion	Space	Total
1984-1991	16%	5%	NA	22%	12%	17%	16%
1991-1993	-7%	-16%	-4%	9%	-4%	-6%	-5%
1994-1999	13%	9%	7%	4%	6%	7%	9%

Years with \* are Forecast

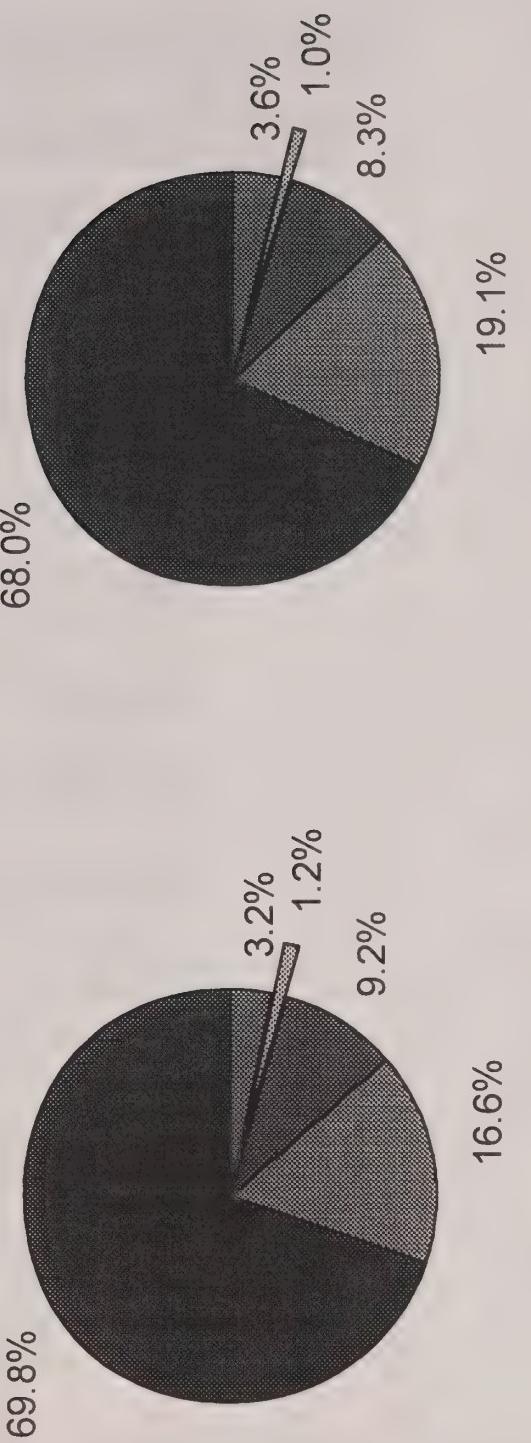
# SALES BY SUB-SECTOR

## % OF TOTAL SALES



# SALES BY PRODUCT CATEGORY

## % OF TOTAL SALES



1994

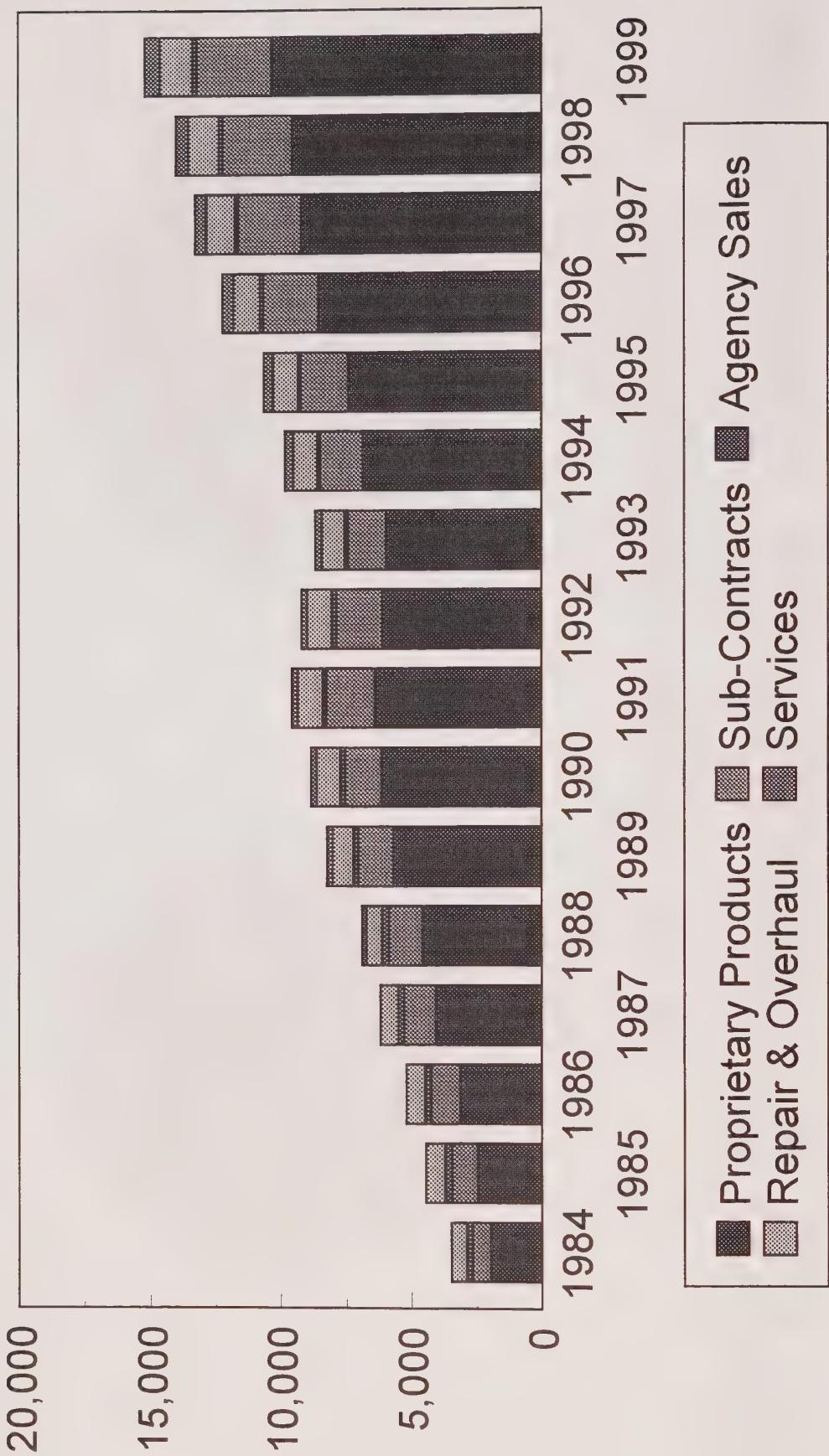
1999

(Forecast)

- |                        |                |                     |
|------------------------|----------------|---------------------|
| ■ Proprietary Products | ■ Subcontracts | ■ Repair & Overhaul |
| ■ Agency Sales         | ■ Services     |                     |

# Sales by Product Category

\$ Millions



Sales by Product Category (\$ Millions)						
Fiscal Year	Proprietary Products	Sub-Contracts	Agency Sales	Repair & Overhaul	Services	Total
1984	1971	700	217	593	0	3481
1985	2489	973	280	696	0	4438
1986	3136	1104	253	704	0	5197
1987	4050	1216	223	694	0	6184
1988	4552	1315	258	620	159	6904
1989	5687	1356	196	783	221	8243
1990	6140	1402	193	899	212	8847
1991	6403	1862	154	937	239	9595
1992	6098	1790	151	951	214	9204
1993	5952	1480	117	879	255	8683
1994	6852	1635	113	907	314	9821
1995*	7395	1816	121	943	353	10628
1996*	8543	2088	134	1031	406	12202
1997*	9181	2407	139	1113	435	13275
1998*	9552	2637	142	1197	466	13994
1999*	10314	2890	149	1265	548	15166

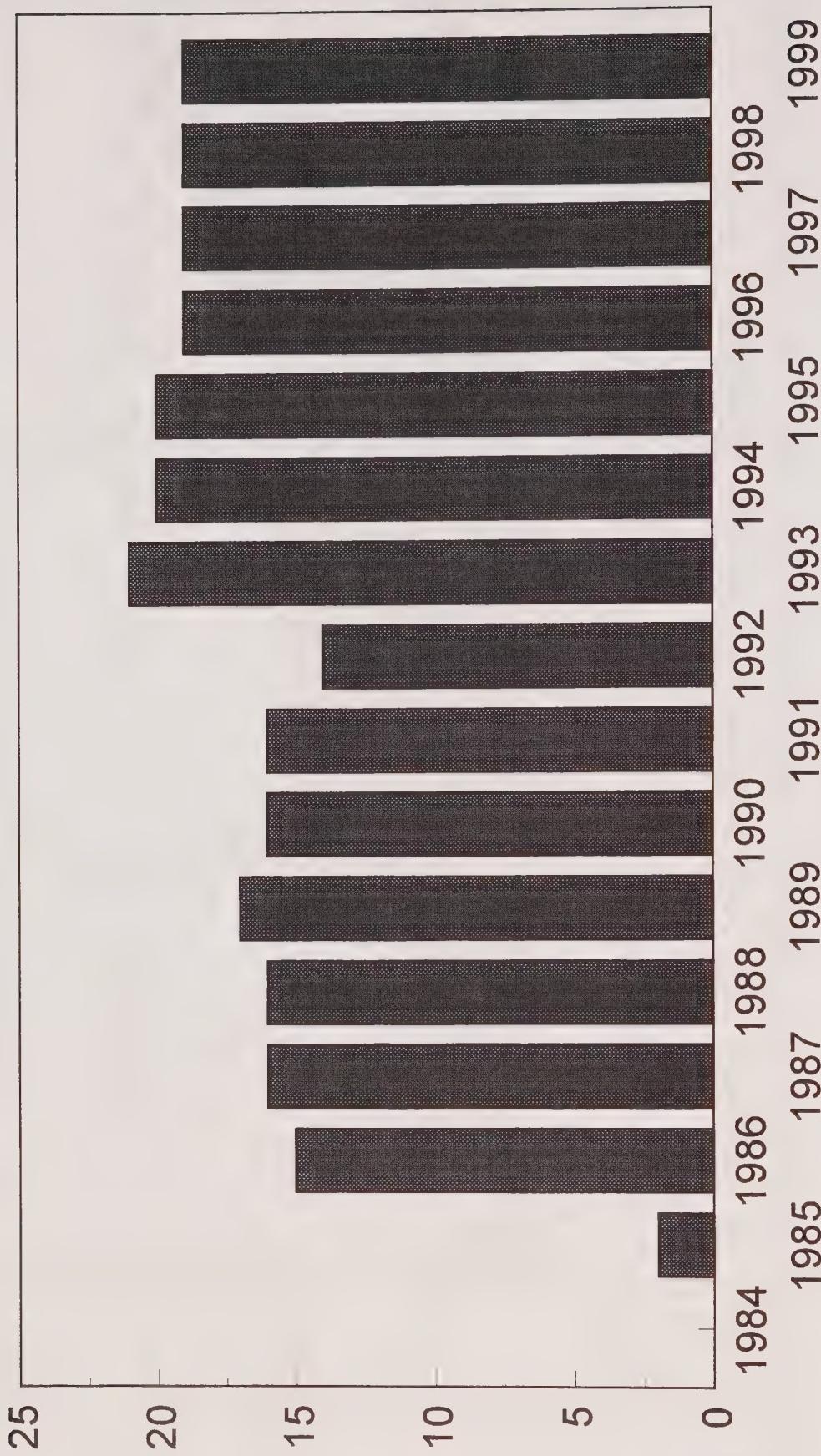
Percentage of Total Sales						
Fiscal Year	Proprietary Products	Sub-Contracts	Agency Sales	Repair & Overhaul	Services	Total
1984	57%	20%	6%	17%	0%	100%
1985	56%	22%	6%	16%	0%	100%
1986	60%	21%	5%	14%	0%	100%
1987	65%	20%	4%	11%	0%	100%
1988	66%	19%	4%	9%	2%	100%
1989	69%	16%	2%	9%	3%	100%
1990	69%	16%	2%	10%	2%	100%
1991	67%	19%	2%	10%	2%	100%
1992	66%	19%	2%	10%	2%	100%
1993	69%	17%	1%	10%	3%	100%
1994	70%	17%	1%	9%	3%	100%
1995*	70%	17%	1%	9%	3%	100%
1996*	70%	17%	1%	8%	3%	100%
1997*	69%	18%	1%	8%	3%	100%
1998*	68%	19%	1%	9%	3%	100%
1999*	68%	19%	1%	8%	4%	100%

Annual Growth Rates						
Fiscal Year	Proprietary Products	Sub-Contracts	Agency Sales	Repair & Overhaul	Services	Total
1985	26%	39%	29%	17%	NA	27%
1986	26%	13%	-10%	1%	NA	17%
1987	29%	10%	-12%	-1%	NA	19%
1988	12%	8%	15%	-11%	NA	12%
1989	25%	3%	-24%	26%	38%	19%
1990	8%	3%	-2%	15%	-4%	7%
1991	4%	33%	-20%	4%	13%	8%
1992	-5%	-4%	-2%	1%	-10%	-4%
1993	-2%	-17%	-23%	-8%	19%	-6%
1994	15%	10%	-3%	3%	23%	13%
1995*	8%	11%	7%	4%	12%	8%
1996*	16%	15%	11%	9%	15%	15%
1997*	7%	15%	4%	8%	7%	9%
1998*	4%	10%	2%	8%	7%	5%
1999*	8%	10%	5%	6%	18%	8%

Compound Annual Average Rate of Growth						
Fiscal Year	Proprietary Products	Sub-Contracts	Agency Sales	Repair & Overhaul	Services	Total
1984-1991	18%	15%	-5%	7%	NA	16%
1991-1993	-4%	-11%	-13%	-3%	3%	-5%
1994-1999	9%	12%	6%	7%	12%	9%

Years with \* are Forecast

# Squares as a % of Sales



25

20

15

10

5

0

Spare Parts (\$Millions)			
Fiscal Year	Spare Parts	Gross Sales	Percent
1984	3	3481	0%
1985	96	4438	2%
1986	767	5197	15%
1987	974	6184	16%
1988	1110	6904	16%
1989	1430	8243	17%
1990	1440	8847	16%
1991	1576	9595	16%
1992	1261	9204	14%
1993	1826	8683	21%
1994	1927	9821	20%
1995*	2103	10628	20%
1996*	2307	12202	19%
1997*	2501	13275	19%
1998*	2670	13994	19%
1999*	2905	15166	19%

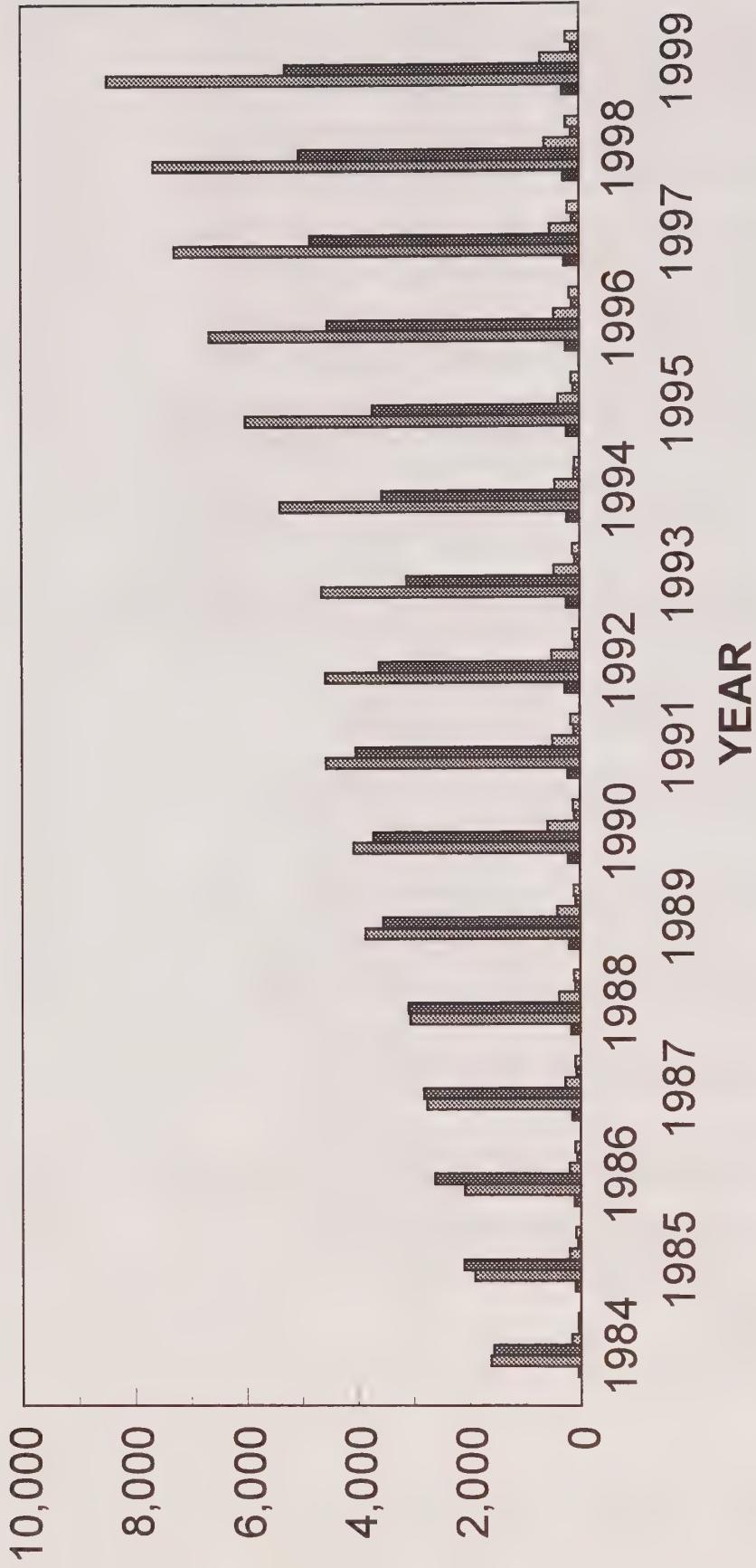
Annual Growth Rates			
Fiscal Year	Spare Parts	Gross Sales	Percent
1985	3100%	27%	2410%
1986	699%	17%	582%
1987	27%	19%	7%
1988	14%	12%	2%
1989	29%	19%	8%
1990	1%	7%	-6%
1991	9%	8%	1%
1992	-20%	-4%	-17%
1993	45%	-6%	53%
1994	6%	13%	-7%
1995*	9%	8%	1%
1996*	10%	15%	-4%
1997*	8%	9%	0%
1998*	7%	5%	1%
1999*	9%	8%	0%

Compound Annual Average Rate of Growth			
Fiscal Year	Spare Parts	Gross Sales	Percent
1984-1991	145%	16%	112%
1991-1993	8%	-5%	13%
1994-1999	9%	9%	0%

Years with \* are Forecast

# SALES BY REGION

## \$ MILLIONS



■ Maritimes ■ Quebec ■ Ontario ■ Manitoba ■ Prairies ■ B.C.

Sales by Regions (\$ Millions)							
Fiscal Year	Atlantic	Quebec	Ontario	Manitoba	Prairies	B.C.	Total
1984	61	1610	1557	160	46	47	3482
1985	99	1905	2093	200	54	87	4438
1986	114	2088	2623	205	66	102	5198
1987	155	2759	2814	280	75	101	6184
1988	174	3052	3083	382	97	114	6902
1989	199	3861	3544	420	83	122	8230
1990	229	4073	3712	587	108	136	8844
1991	224	4552	4025	504	120	169	9593
1992	276	4566	3606	513	102	132	9196
1993	252	4631	3105	465	102	128	8683
1994	230	5383	3553	448	109	97	9820
1995*	234	6003	3728	388	117	156	10626
1996*	250	6647	4522	455	144	182	12200
1997*	283	7270	4831	528	145	215	13273
1998*	293	7641	5031	625	149	252	13992
1999*	310	8464	5282	701	152	253	15163

Percentage of Total Sales							
Fiscal Year	Atlantic	Quebec	Ontario	Manitoba	Prairies	B.C.	Total
1984	2%	46%	45%	5%	1%	1%	100%
1985	2%	43%	47%	5%	1%	2%	100%
1986	2%	40%	50%	4%	1%	2%	100%
1987	3%	45%	46%	5%	1%	2%	100%
1988	3%	44%	45%	6%	1%	2%	100%
1989	2%	47%	43%	5%	1%	1%	100%
1990	3%	46%	42%	7%	1%	2%	100%
1991	2%	47%	42%	5%	1%	2%	100%
1992	3%	50%	39%	6%	1%	1%	100%
1993	3%	53%	36%	5%	1%	1%	100%
1994	2%	55%	36%	5%	1%	1%	100%
1995*	2%	56%	35%	4%	1%	1%	100%
1996*	2%	54%	37%	4%	1%	1%	100%
1997*	2%	55%	36%	4%	1%	2%	100%
1998*	2%	55%	36%	4%	1%	2%	100%
1999*	2%	56%	35%	5%	1%	2%	100%

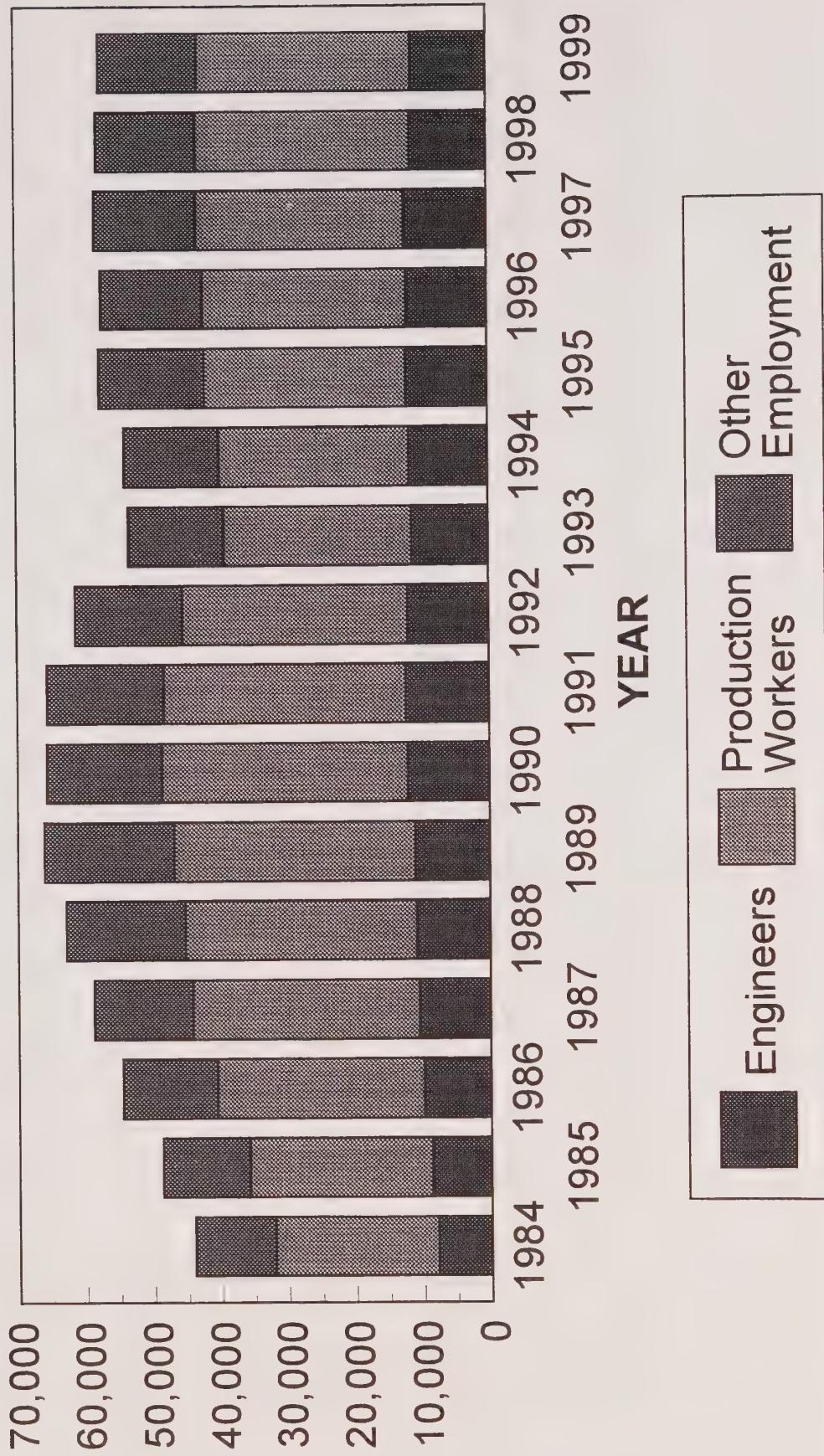
Annual Growth Rates							
Fiscal Year	Atlantic	Quebec	Ontario	Manitoba	Prairies	B.C.	Total
1985	62%	18%	34%	25%	17%	85%	27%
1986	15%	10%	25%	3%	22%	17%	17%
1987	36%	32%	7%	37%	14%	-1%	19%
1988	12%	11%	10%	36%	29%	13%	12%
1989	14%	27%	15%	10%	-14%	7%	19%
1990	15%	5%	5%	40%	30%	11%	7%
1991	-2%	12%	8%	-14%	11%	24%	8%
1992	23%	0.3%	-10%	2%	-15%	-22%	-4%
1993	-9%	1%	-14%	-9%	0%	-3%	-6%
1994	-9%	16%	14%	-4%	7%	-24%	13%
1995*	2%	12%	5%	-13%	7%	61%	8%
1996*	7%	11%	21%	17%	23%	17%	15%
1997*	13%	9%	7%	16%	1%	18%	9%
1998*	4%	5%	4%	18%	3%	17%	5%
1999*	6%	11%	5%	12%	2%	0.4%	8%

Compound Annual Average Rate of Growth							
Fiscal Year	Atlantic	Quebec	Ontario	Manitoba	Prairies	B.C.	Total
1984-1991	20%	16%	15%	18%	15%	20%	16%
1991-1993	6%	1%	-12%	-4%	-8%	-13%	-5%
1994-1999	6%	9%	8%	9%	7%	21%	9%

Years with \* are Forecast

# EMPLOYMENT BY CATEGORY

## # EMPLOYEES



Employment (Number of Employees)				
Fiscal Year	Engineering	Production	Other	Total
1984	7893	24069	12079	44041
1985	8702	26982	13109	48793
1986	9890	30726	14016	54632
1987	10554	33656	14652	58862
1988	10876	34410	17574	62860
1989	11016	35881	19211	66108
1990	12081	36510	17088	65679
1991	12375	35895	17344	65614
1992	12016	33449	15851	61316
1993	11394	27868	14170	53432
1994	11716	28174	14141	54031
1995*	12100	29904	15633	57637
1996*	11953	30222	15163	57338
1997*	12281	30848	15125	58254
1998*	11354	31766	14748	57868
1999*	11220	31670	14550	57440

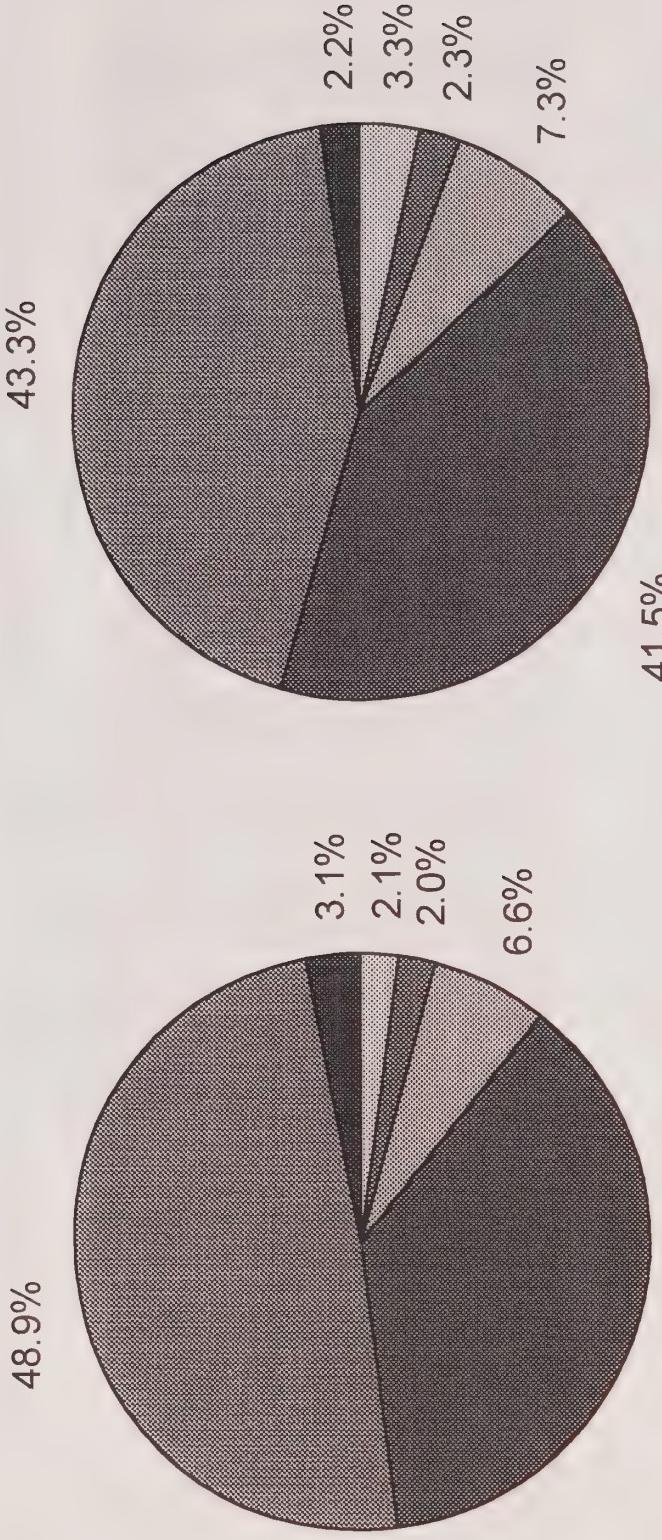
Percentage of Employees				
Fiscal Year	Engineering	Production	Other	Total
1984	18%	55%	27%	100%
1985	18%	55%	27%	100%
1986	18%	56%	26%	100%
1987	18%	57%	25%	100%
1988	17%	55%	28%	100%
1989	17%	54%	29%	100%
1990	18%	56%	26%	100%
1991	19%	55%	26%	100%
1992	20%	55%	26%	100%
1993	21%	52%	27%	100%
1994	22%	52%	26%	100%
1995*	21%	52%	27%	100%
1996*	21%	53%	26%	100%
1997*	21%	53%	26%	100%
1998*	20%	55%	25%	100%
1999*	20%	55%	25%	100%

Annual Growth Rates				
Fiscal Year	Engineering	Production	Other	Total
1985	10%	12%	9%	11%
1986	14%	14%	7%	12%
1987	7%	10%	5%	8%
1988	3%	2%	20%	7%
1989	1%	4%	9%	5%
1990	10%	2%	-11%	-1%
1991	2%	-2%	1%	0%
1992	-3%	-7%	-9%	-7%
1993	-5%	-17%	-11%	-13%
1994	3%	1%	0%	1%
1995*	3%	6%	11%	7%
1996*	-1%	1%	-3%	-1%
1997*	3%	2%	0%	2%
1998*	-8%	3%	-2%	-1%
1999*	-1%	0%	-1%	-1%

Compound Average Annual Rate of Growth				
Fiscal Year	Engineering	Production	Other	Total
1984-1991	7%	6%	5%	6%
1991-1993	-4%	-12%	-10%	-10%
1994-1999	-1%	2%	1%	1%

Years with \* are Forecast

# DISTRIBUTION OF EMPLOYMENT BY REGION



1994

1999

FORECAST

■ Atlantic ■ Quebec ■ Ontario ■ Manitoba ■ Alta-Sask ■ BC

Regional Employment ( Number of Employees)							
Fiscal Year	Atlantic	Quebec	Ontario	Manitoba	Prairies	B.C.	Total
1984	999	18156	21119	2562	599	606	44041
1985	1250	19385	23930	2801	685	742	48793
1986	1822	21106	26619	3293	794	999	54633
1987	1718	23101	28481	3696	867	998	58861
1988	1888	25432	29363	3954	1049	1173	62859
1989	1794	27078	30878	4213	911	1233	66107
1990	1952	27937	28555	4743	1172	1320	65679
1991	1933	28194	28358	4177	1418	1535	65615
1992	2167	29182	23346	4293	1121	1206	61315
1993	1911	26281	19347	3500	1179	1214	53432
1994	1655	26411	20137	3562	1106	1135	54006
1995*	1716	27927	22116	3347	1201	1307	57614
1996*	1788	26285	22876	3588	1277	1499	57313
1997*	1878	26435	23032	3839	1325	1720	58229
1998*	1827	25100	23614	4034	1347	1919	57841
1999*	1257	24889	23807	4215	1327	1920	57415

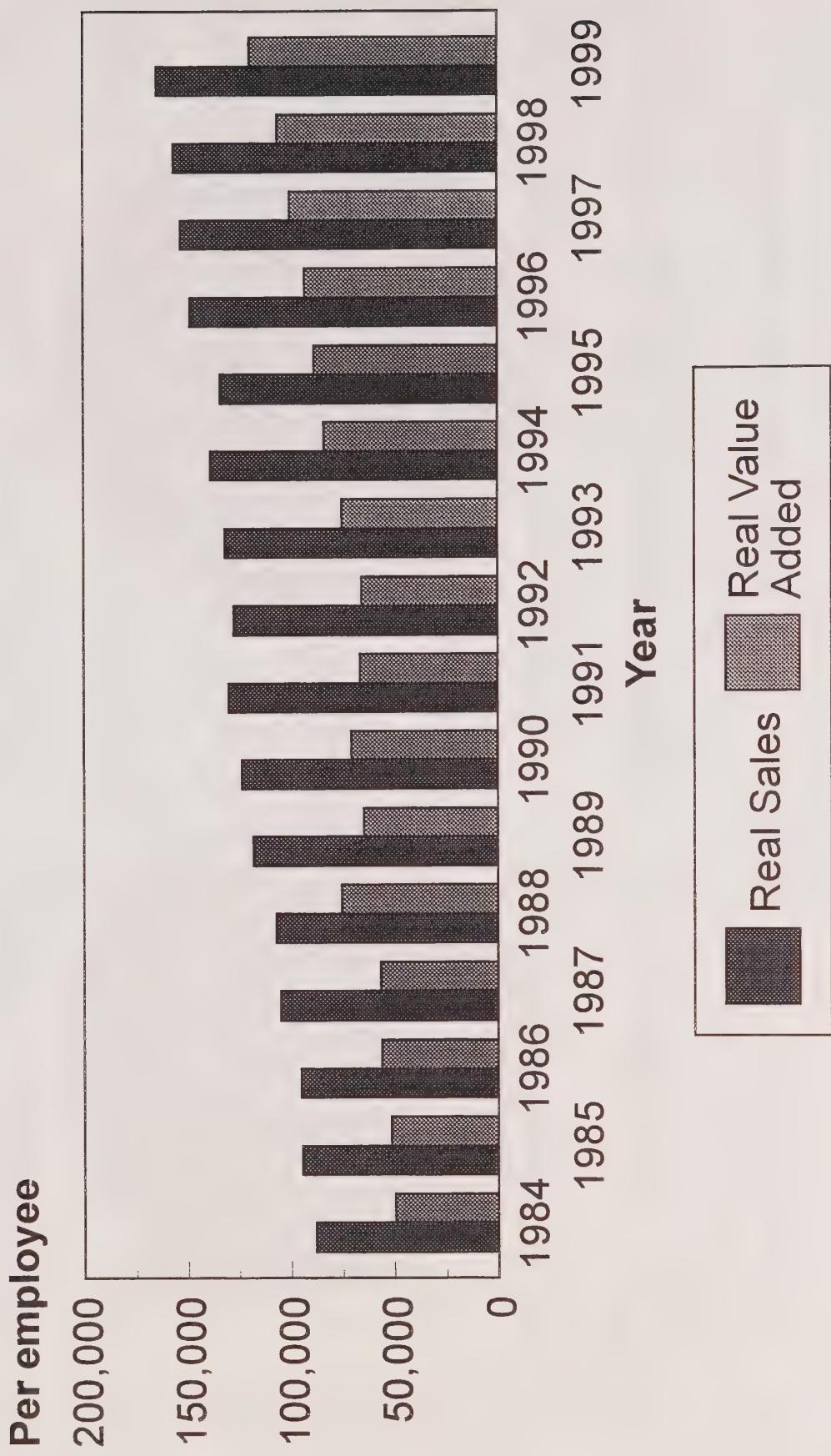
Percentage of Total Employment							
Fiscal Year	Atlantic	Quebec	Ontario	Manitoba	Prairies	B.C.	Total
1984	2%	41%	48%	6%	1%	1%	100%
1985	3%	40%	49%	6%	1%	2%	100%
1986	3%	39%	49%	6%	1%	2%	100%
1987	3%	39%	48%	6%	1%	2%	100%
1988	3%	40%	47%	6%	2%	2%	100%
1989	3%	41%	47%	6%	1%	2%	100%
1990	3%	43%	43%	7%	2%	2%	100%
1991	3%	43%	43%	6%	2%	2%	100%
1992	4%	48%	38%	7%	2%	2%	100%
1993	4%	49%	36%	7%	2%	2%	100%
1994	3%	49%	37%	7%	2%	2%	100%
1995*	3%	48%	38%	6%	2%	2%	100%
1996*	3%	46%	40%	6%	2%	3%	100%
1997*	3%	45%	40%	7%	2%	3%	100%
1998*	3%	43%	41%	7%	2%	3%	100%
1999*	2%	43%	41%	7%	2%	3%	100%

Annual Growth Rates							
Fiscal Year	Atlantic	Quebec	Ontario	Manitoba	Prairies	B.C.	Total
1985	25%	7%	13%	9%	14%	22%	11%
1986	46%	9%	11%	18%	16%	35%	12%
1987	-6%	9%	7%	12%	9%	0%	8%
1988	10%	10%	3%	7%	21%	18%	7%
1989	-5%	6%	5%	7%	-13%	5%	5%
1990	9%	3%	-8%	13%	29%	7%	-1%
1991	-1%	1%	-1%	-12%	21%	16%	0%
1992	12%	4%	-18%	3%	-21%	-21%	-7%
1993	-12%	-10%	-17%	-18%	5%	1%	-13%
1994	-13%	0%	4%	2%	-6%	-7%	1%
1995*	4%	6%	10%	-6%	9%	15%	7%
1996*	4%	-6%	3%	7%	6%	15%	-1%
1997*	5%	1%	1%	7%	4%	15%	2%
1998*	-3%	-5%	3%	5%	2%	12%	-1%
1999*	-31%	-1%	1%	4%	-1%	0%	-1%

Compound Average Annual Rate of Growth							
Fiscal Year	Atlantic	Quebec	Ontario	Manitoba	Prairies	B.C.	Total
1984-1991	10%	6%	4%	7%	13%	14%	6%
1991-1993	-1%	-3%	-17%	-8%	-9%	-11%	-10%
1994-1999	-5%	-1%	3%	3%	4%	11%	1%

Years with \* are Forecast

# Estimate of Output per Employee (1986 constant \$)



<b>Estimate of Output per Employee (1986 constant \$)</b>		
Fiscal Year	Real Sales per Employe	Real value added per Employe
1984	\$87,945	\$49,462
1985	\$94,448	\$51,317
1986	\$95,144	\$55,973
1987	\$104,851	\$56,409
1988	\$107,019	\$75,462
1989	\$117,893	\$64,565
1990	\$123,537	\$70,701
1991	\$129,841	\$66,492
1992	\$127,532	\$65,470
1993	\$131,586	\$75,200
1994	\$138,422	\$83,761
1995*	\$133,689	\$88,407
1996*	\$148,585	\$92,808
1997*	\$153,123	\$99,990
1998*	\$156,499	\$106,161
1999*	\$164,473	\$119,462

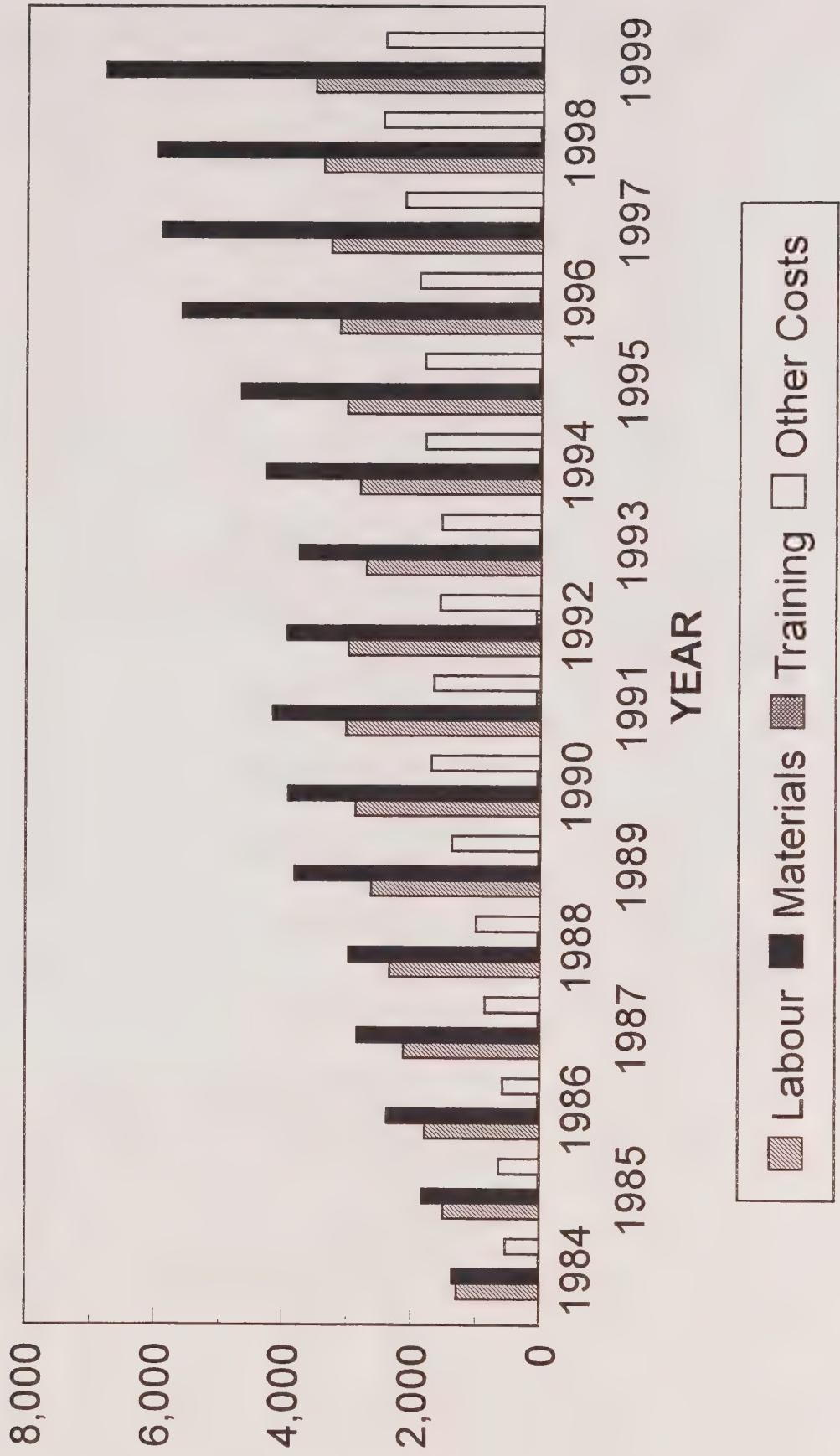
<b>Annual Growth Rates</b>		
Fiscal Year	Real Sales per Employe	Real value added per Employe
1985	7%	4%
1986	1%	9%
1987	10%	1%
1988	2%	34%
1989	10%	-14%
1990	5%	10%
1991	5%	-6%
1992	-2%	-2%
1993	3%	15%
1994	5%	11%
1995*	-3%	6%
1996*	11%	5%
1997*	3%	8%
1998*	2%	6%
1999*	5%	13%

<b>Compound Annual Average Rate of Growth</b>		
Fiscal Year	Real Sales per Employe	Real value added per Employe
1984-1991	6%	4%
1991-1993	1%	6%
1994-1999	4%	7%

Years with \* are Forecast

# Industry Costs

\$ Millions



Breakdown of Total Costs (\$ Millions)					
Fiscal Year	Labour	Material Purchase	Training	Other	Total
1984	1291	1358	15	526	3190
1985	1501	1825	17	635	3978
1986	1787	2374	29	574	4764
1987	2127	2840	31	856	5854
1988	2347	2981	36	993	6357
1989	2634	3822	30	1371	7857
1990	2877	3920	45	1693	8535
1991	3027	4162	58	1664	8911
1992	2999	3939	68	1563	8569
1993	2720	3767	29	1537	8053
1994	2818	4275	32	1803	8928
1995*	3018	4673	37	1811	9539
1996*	3139	5600	38	1907	10684
1997*	3279	5910	40	2133	11362
1998*	3399	5989	40	2478	11906
1999*	3532	6787	40	2448	12807

Percentage of Total Costs					
Fiscal Year	Labour	Material Purchase	Training	Other	Total
1984	40%	43%	0.5%	16%	100%
1985	38%	46%	0.4%	16%	100%
1986	38%	50%	0.6%	12%	100%
1987	36%	49%	0.5%	15%	100%
1988	37%	47%	0.6%	16%	100%
1989	34%	49%	0.4%	17%	100%
1990	34%	46%	0.5%	20%	100%
1991	34%	47%	0.7%	19%	100%
1992	35%	46%	0.8%	18%	100%
1993	34%	47%	0.4%	19%	100%
1994	32%	48%	0.4%	20%	100%
1995*	32%	49%	0.4%	19%	100%
1996*	29%	52%	0.4%	18%	100%
1997*	29%	52%	0.4%	19%	100%
1998*	29%	50%	0.3%	21%	100%
1999*	28%	53%	0.3%	19%	100%

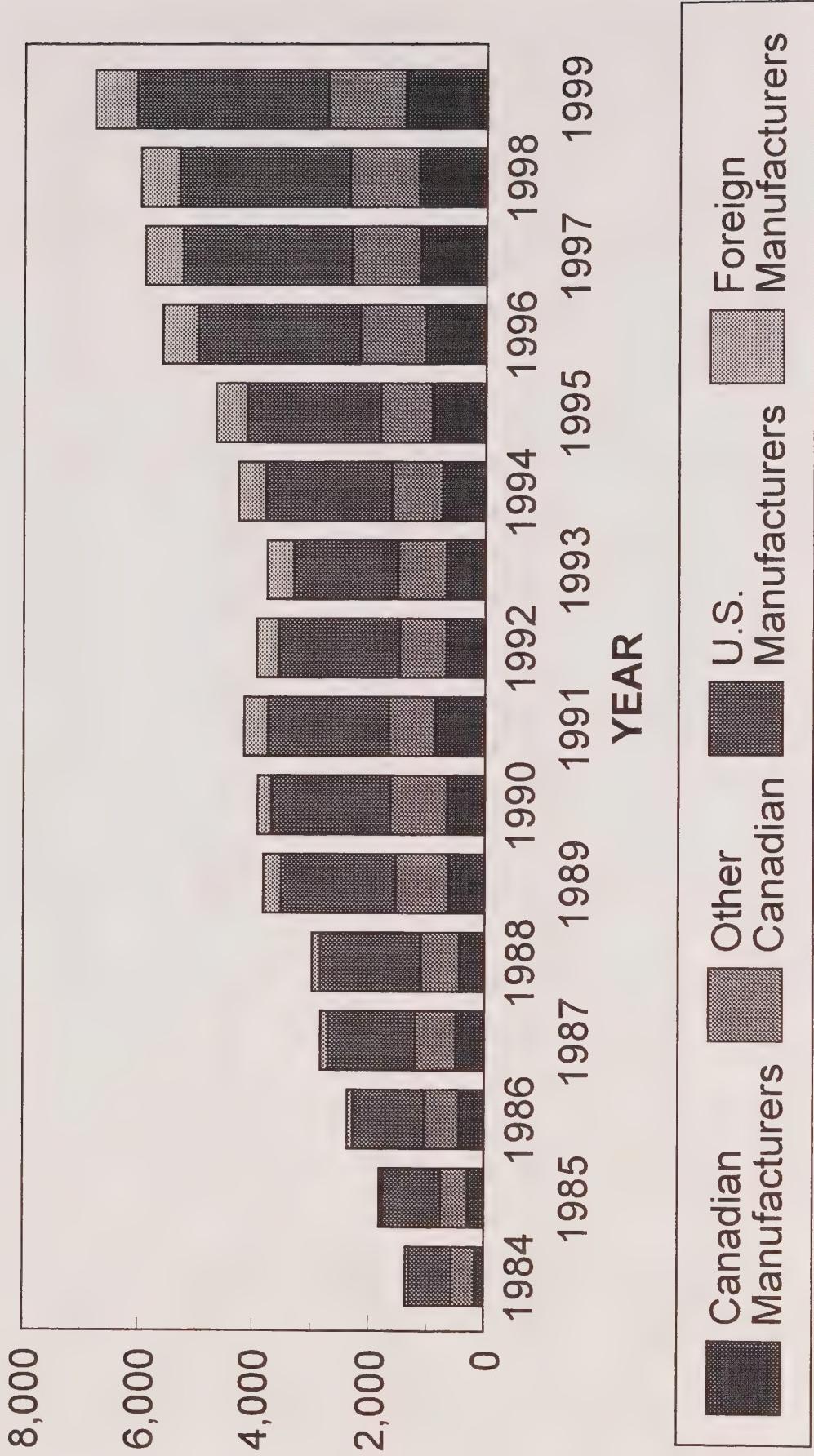
Annual Growth Rates					
Fiscal Year	Labour	Material Purchase	Training	Other	Total
1985	16%	34%	13%	21%	25%
1986	19%	30%	71%	-10%	20%
1987	19%	20%	7%	49%	23%
1988	10%	5%	16%	16%	9%
1989	12%	28%	-17%	38%	24%
1990	9%	3%	50%	23%	9%
1991	5%	6%	29%	-2%	4%
1992	-1%	-5%	17%	-6%	-4%
1993	-9%	-4%	-57%	-2%	-6%
1994	4%	13%	10%	17%	11%
1995*	7%	9%	16%	0%	7%
1996*	4%	20%	3%	5%	12%
1997*	4%	6%	5%	12%	6%
1998*	4%	1%	0%	16%	5%
1999*	4%	13%	0%	-1%	8%

Compound Annual Average Rate of Growth					
Fiscal Year	Labour	Material Purchase	Training	Other	Total
1984-1991	13%	17%	21%	18%	16%
1991-1993	-5%	-5%	-29%	-4%	-5%
1994-1999	5%	10%	5%	6%	7%

Years with \* are Forecast

# SOURCES OF MATERIAL INPUTS

\$MILLIONS



Sources of Material Inputs (\$ Millions)					
Fiscal Year	Canadian Aerospace & Defence Manufacturers	Other Canadian Companies	U.S.	Other Foreign	TOTAL
1984	155	415	731	57	1358
1985	286	466	1012	61	1825
1986	430	595	1258	91	2374
1987	503	704	1503	131	2841
1988	437	663	1737	144	2981
1989	627	914	1975	306	3822
1990	654	993	2039	233	3919
1991	869	802	2071	419	4161
1992	672	808	2083	376	3939
1993	678	835	1792	461	3766
1994	747	879	2164	484	4274
1995*	926	907	2290	550	4673
1996*	1046	1133	2807	615	5601
1997*	1135	1205	2909	661	5910
1998*	1159	1200	2949	680	5988
1999*	1402	1345	3318	721	6786

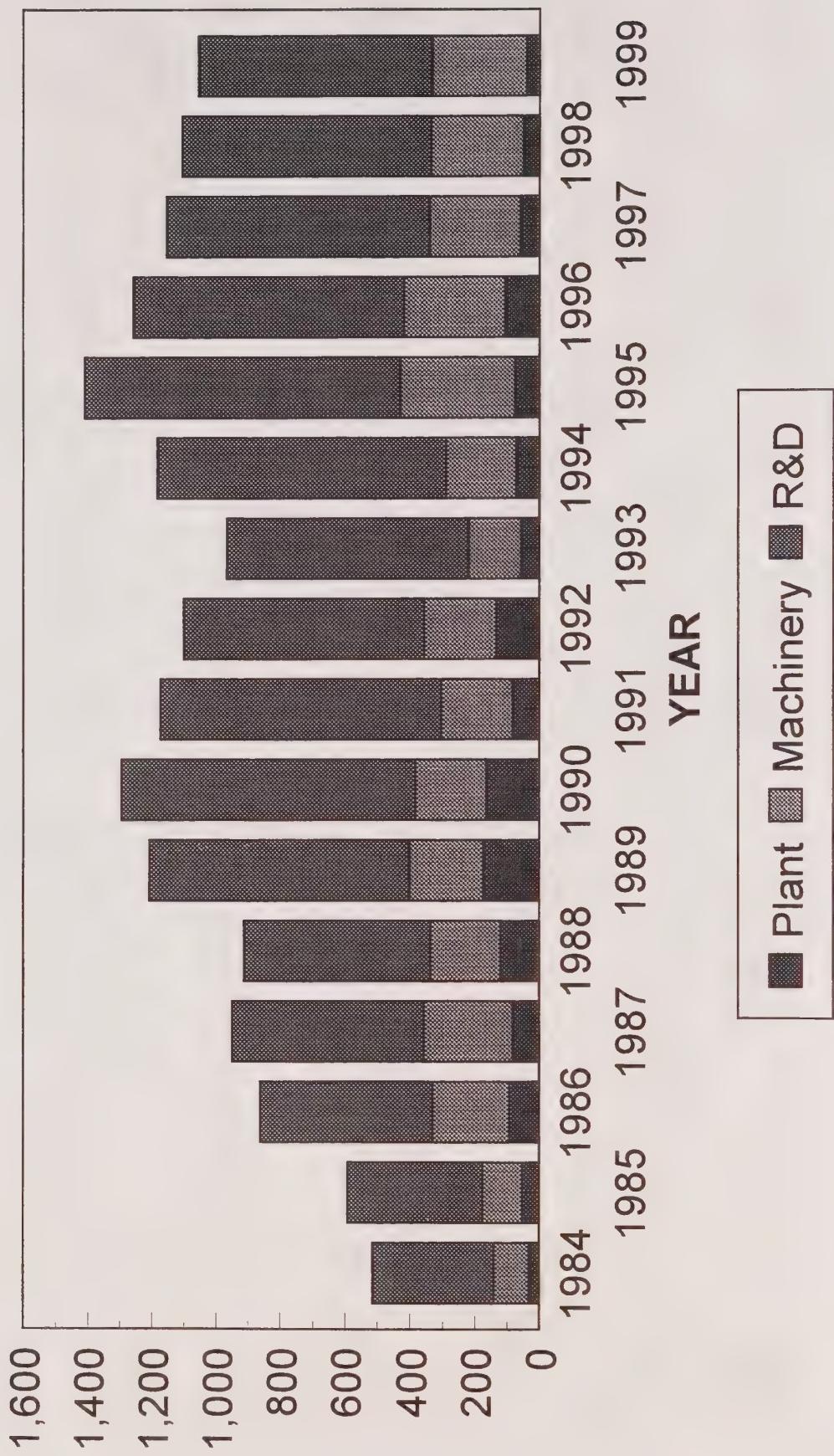
Percentage of Total					
Fiscal Year	Canadian Aerospace & Defence Manufacturers	Other Canadian Companies	U.S.	Other Foreign	TOTAL
1984	11%	31%	54%	4%	100%
1985	16%	26%	55%	3%	100%
1986	18%	25%	53%	4%	100%
1987	18%	25%	53%	5%	100%
1988	15%	22%	58%	5%	100%
1989	16%	24%	52%	8%	100%
1990	17%	25%	52%	6%	100%
1991	21%	19%	50%	10%	100%
1992	17%	21%	53%	10%	100%
1993	18%	22%	48%	12%	100%
1994	17%	21%	51%	11%	100%
1995*	20%	19%	49%	12%	100%
1996*	19%	20%	50%	11%	100%
1997*	19%	20%	49%	11%	100%
1998*	19%	20%	49%	11%	100%
1999*	21%	20%	49%	11%	100%

Annual Growth Rates					
Fiscal Year	Canadian Aerospace & Defence Manufacturers	Other Canadian Companies	U.S.	Other Foreign	TOTAL
1985	85%	12%	38%	7%	34%
1986	50%	28%	24%	49%	30%
1987	17%	18%	19%	44%	20%
1988	-13%	-6%	16%	10%	5%
1989	43%	38%	14%	113%	28%
1990	4%	9%	3%	-24%	3%
1991	33%	-19%	2%	80%	6%
1992	-23%	1%	1%	-10%	-5%
1993	1%	3%	-14%	23%	-4%
1994	10%	5%	21%	5%	13%
1995*	24%	3%	6%	14%	9%
1996*	13%	25%	23%	12%	20%
1997*	9%	6%	4%	7%	6%
1998*	2%	0%	1%	3%	1%
1999*	21%	12%	13%	6%	13%

Compound Annual Average Rate of Growth					
Fiscal Year	Canadian Aerospace & Defence Manufacturers	Other Canadian Companies	U.S.	Other Foreign	TOTAL
1984-1991	28%	10%	16%	33%	17%
1991-1993	-12%	2%	-7%	5%	-5%
1994-1999	13%	9%	9%	8%	10%

Years with \* are Forecast

# NEW INVESTMENT BY CATEGORY \$ MILLIONS



Distribution of Investment Expenditure (\$ Millions)				
Fiscal Year	Plant	Machinery	R&D	Total
1984	31	110	373	514
1985	52	125	415	592
1986	93	238	530	861
1987	83	275	592	950
1988	120	218	575	913
1989	172	228	808	1208
1990	164	219	912	1295
1991	83	221	871	1175
1992	134	222	745	1101
1993	56	163	747	966
1994	72	217	896	1185
1995*	76	353	982	1411
1996*	105	314	840	1259
1997*	57	283	816	1156
1998*	50	286	770	1106
1999*	42	291	724	1057

Percentage of Total Expenditure				
Fiscal Year	Plant	Machinery	R&D	Total
1984	6%	21%	73%	100%
1985	9%	21%	70%	100%
1986	11%	28%	62%	100%
1987	9%	29%	62%	100%
1988	13%	24%	63%	100%
1989	14%	19%	67%	100%
1990	13%	17%	70%	100%
1991	7%	19%	74%	100%
1992	12%	20%	68%	100%
1993	6%	17%	77%	100%
1994	6%	18%	76%	100%
1995*	5%	25%	70%	100%
1996*	8%	25%	67%	100%
1997*	5%	24%	71%	100%
1998*	5%	26%	70%	100%
1999*	4%	28%	68%	100%

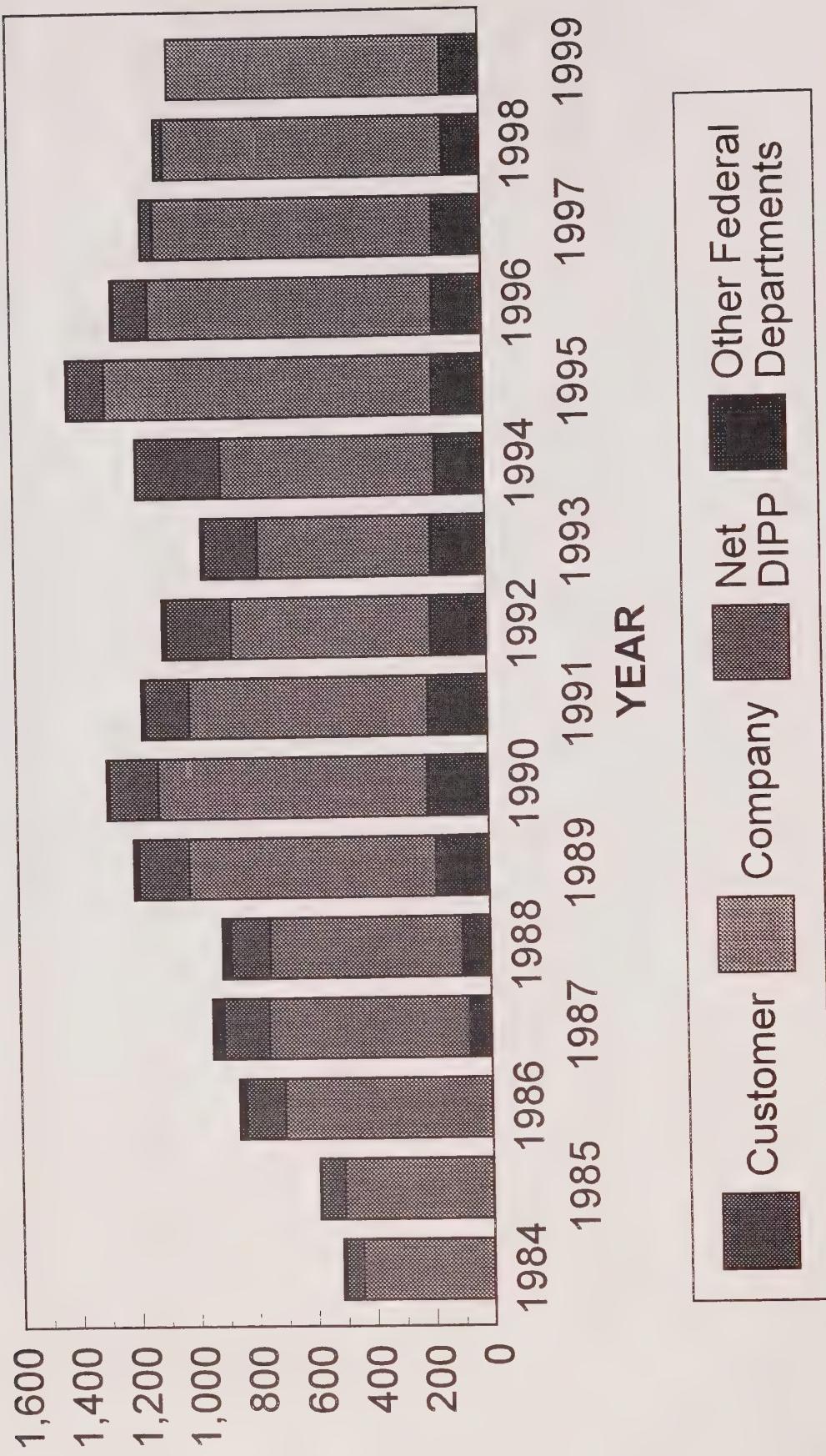
Annual Growth Rates				
Fiscal Year	Plant	Machinery	R&D	Total
1985	68%	14%	11%	15%
1986	79%	90%	28%	45%
1987	-11%	16%	12%	10%
1988	45%	-21%	-3%	-4%
1989	43%	5%	41%	32%
1990	-5%	-4%	13%	7%
1991	-49%	1%	-4%	-9%
1992	61%	0%	-14%	-6%
1993	-58%	-27%	0%	-12%
1994	29%	33%	20%	23%
1995*	6%	63%	10%	19%
1996*	38%	-11%	-14%	-11%
1997*	-46%	-10%	-3%	-8%
1998*	-12%	1%	-6%	-4%
1999*	-16%	2%	-6%	-4%

Compound Annual Average Rate of Growth				
Fiscal Year	Plant	Machinery	R&D	Total
1984-1991	15%	10%	13%	13%
1991-1993	-18%	-14%	-7%	-9%
1994-1999	-10%	6%	-4%	-2%

Years with \* are Forecast

# SOURCES OF INVESTMENT

## \$ MILLIONS



Sources of Investment (\$ Millions)					
Fiscal Year	Customers	Companies	Net DIPP	Other Departments	Total
1984	2	444	57	11	514
1985	2	504	81	4	591
1986	3	703	135	20	861
1987	75	680	157	37	949
1988	97	654	134	27	912
1989	183	838	169	18	1208
1990	208	913	164	10	1295
1991	205	810	148	12	1175
1992	192	675	222	13	1102
1993	187	587	185	7	966
1994	170	727	284	4	1185
1995*	176	1107	124	4	1411
1996*	171	964	117	7	1259
1997*	167	946	42	0	1155
1998*	128	947	31	0	1106
1999*	132	926	-2	0	1056

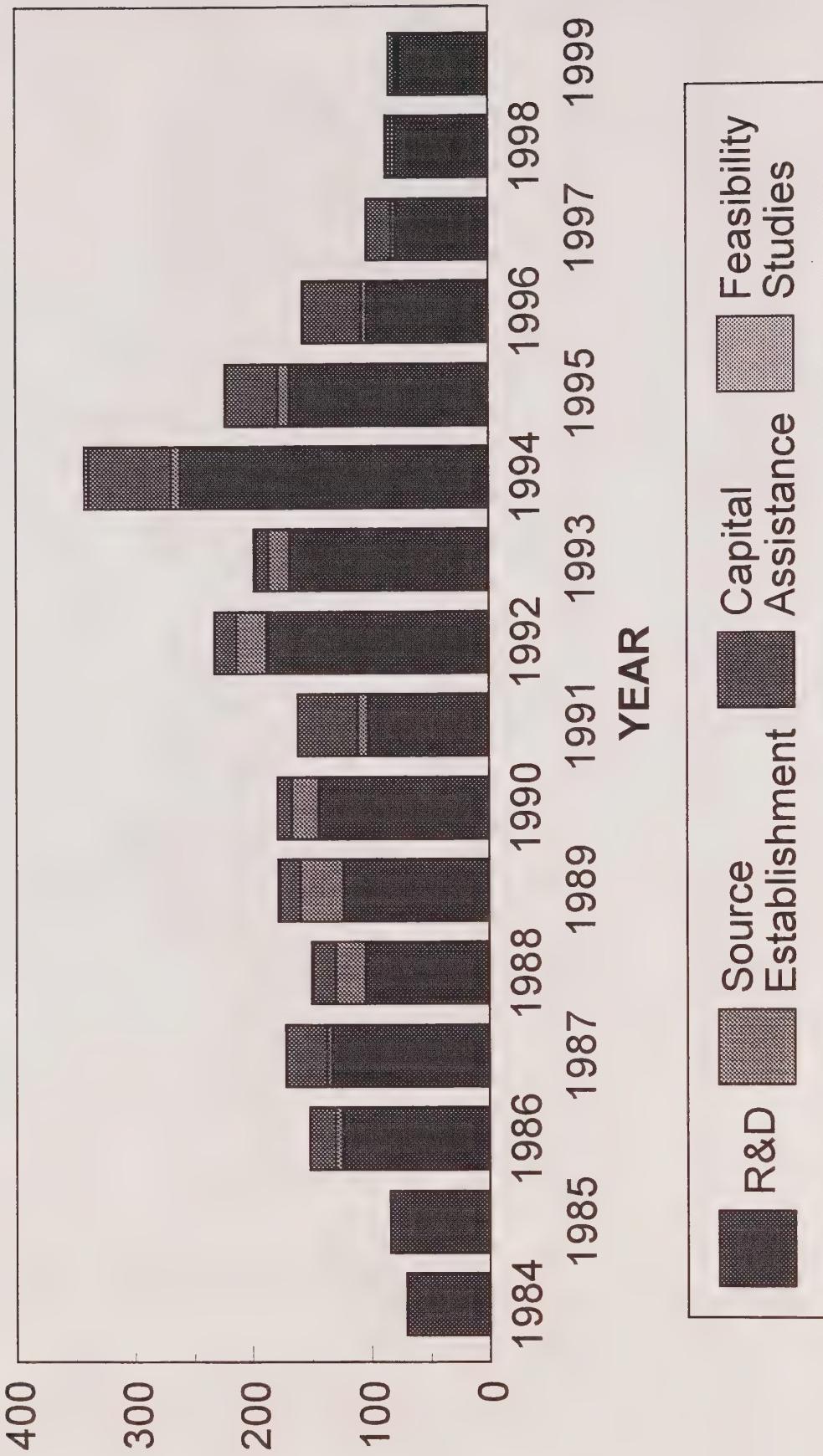
Percentage of Total Investment					
Fiscal Year	Customers	Companies	Net DIPP	Other Departments	Total
1984	0%	86%	11%	2%	100%
1985	0%	85%	14%	1%	100%
1986	0%	82%	16%	2%	100%
1987	8%	72%	17%	4%	100%
1988	11%	72%	15%	3%	100%
1989	15%	69%	14%	1%	100%
1990	16%	71%	13%	1%	100%
1991	17%	69%	13%	1%	100%
1992	17%	61%	20%	1%	100%
1993	19%	61%	19%	1%	100%
1994	14%	61%	24%	0%	100%
1995*	12%	78%	9%	0%	100%
1996*	14%	77%	9%	1%	100%
1997*	14%	82%	4%	0%	100%
1998*	12%	86%	3%	0%	100%
1999*	13%	88%	0%	0%	100%

Annual Growth Rates					
Fiscal Year	Customers	Companies	Net DIPP	Other Departments	Total
1985	0%	14%	42%	-64%	15%
1986	50%	39%	67%	400%	46%
1987	2400%	-3%	16%	85%	10%
1988	29%	-4%	-15%	-27%	-4%
1989	89%	28%	26%	-33%	32%
1990	14%	9%	-3%	-44%	7%
1991	-1%	-11%	-10%	20%	-9%
1992	-6%	-17%	50%	8%	-6.2%
1993	-3%	-13%	-17%	-46%	-12%
1994	-9%	24%	54%	-43%	23%
1995*	4%	52%	-56%	0%	19%
1996*	-3%	-13%	-6%	75%	-11%
1997*	-2%	-2%	-64%	-100%	-8%
1998*	-23%	0.1%	-26%	NA	-4%
1999*	3%	-2%	-106%	NA	-5%

Compound Annual Average Rate of Growth					
Fiscal Year	Customers	Companies	Net DIPP	Other Departments	Total
1984-1991	94%	9%	15%	1%	13%
1991-1993	-4%	-15%	12%	-24%	-9%
1994-1999	-5%	5%	-137%	-100%	-2%

Years with \* are Forecast

# INDUSTRY CANADA SUPPORT FOR INVESTMENT \$ MILLIONS



Industry Canada Support for Investment ( \$ Millions)						
Fiscal Year	R&D	MOD	SRC	CAP	FEAS	Total
1984	70	14	0	0	0	84
1985	84	19	0	0	0	103
1986	124	0	6	22	0	152
1987	133	0	4	35	0	172
1988	105	0	25	19	1	150
1989	123	0	36	17	2	178
1990	144	0	22	12	0	178
1991	102	0	9	50	0	161
1992	187	0	26	19	0	232
1993	168	0	18	10	2	198
1994	261	0	8	70	3	342
1995*	168	0	9	45	1	223
1996*	103	0	4	50	0	157
1997*	78	0	4	21	0	103
1998*	79	0	3	5	0	87
1999*	76	0	3	5	0	84

Percentage of Total						
Fiscal Year	R&D	MOD	SRC	CAP	FEAS	Total
1984	83%	17%	0%	0%	0%	100%
1985	82%	18%	0%	0%	0%	100%
1986	82%	0%	4%	14%	0%	100%
1987	77%	0%	2%	20%	0%	100%
1988	70%	0%	17%	13%	1%	100%
1989	69%	0%	20%	10%	1%	100%
1990	81%	0%	12%	7%	0%	100%
1991	63%	0%	6%	31%	0%	100%
1992	81%	0%	11%	8%	0%	100%
1993	85%	0%	9%	5%	1%	100%
1994	76%	0%	2%	20%	1%	100%
1995*	75%	0%	4%	20%	0%	100%
1996*	66%	0%	3%	32%	0%	100%
1997*	76%	0%	4%	20%	0%	100%
1998*	91%	0%	3%	6%	0%	100%
1999*	90%	0%	4%	6%	0%	100%

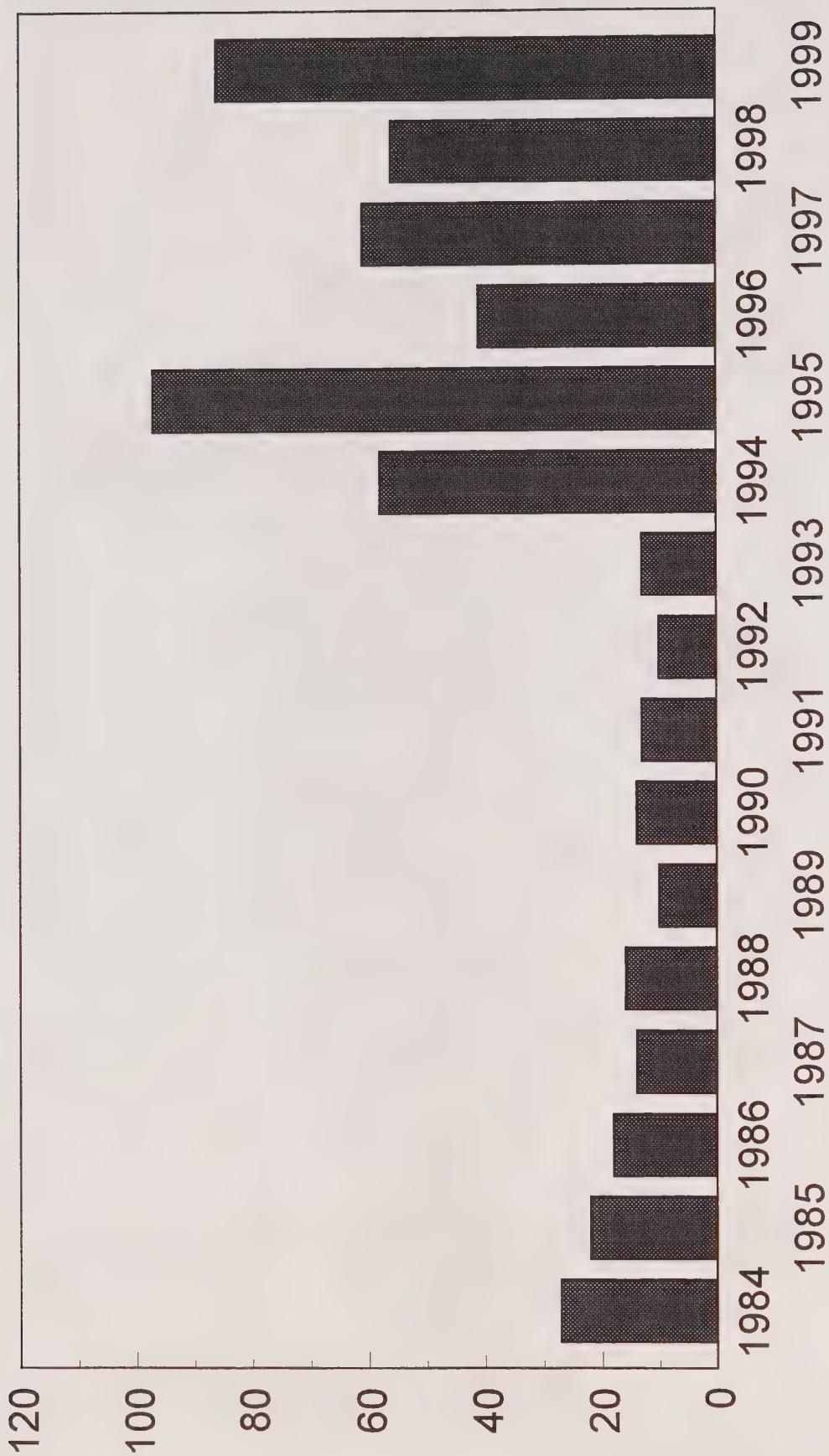
Annual Growth Rates						
Fiscal Year	R&D	MOD	SRC	CAP	FEAS	Total
1984	NA	NA	NA	NA	NA	NA
1985	20%	36%	NA	NA	NA	23%
1986	48%	-100%	NA	NA	NA	48%
1987	7%	NA	-33%	59%	NA	13%
1988	-21%	NA	525%	-46%	NA	-13%
1989	17%	NA	44%	-11%	100%	19%
1990	17%	NA	-39%	-29%	-100%	0%
1991	-29%	NA	-59%	317%	NA	-10%
1992	83%	NA	189%	-62%	NA	44%
1993	-10%	NA	-31%	-47%	NA	-15%
1994	55%	NA	-56%	600%	50%	73%
1995*	-36%	NA	13%	-36%	-67%	-35%
1996*	-39%	NA	-56%	11%	-100%	-30%
1997*	-24%	NA	0%	-58%	NA	-34%
1998*	1%	NA	-25%	-76%	NA	-16%
1999*	-4%	NA	0%	0%	NA	-3%

Compound Annual Average Rate of Growth						
Fiscal Year	R&D	MOD	SRC	CAP	FEAS	Total
1984-1991	6%	-100%	NA	NA	NA	10%
1991-1993	28%	NA	41%	-55%	NA	11%
1994-1999	-22%	NA	-18%	-41%	-100%	-24%

MOD: Modernisation SRC: Source Establishment	CAP: Capital Assistance FEAS: Market Feasibility Study
Years with * are Forecast	

# DIP Repayments

\$ Millions



Repayments Under DIPP (\$ Millions)	
Fiscal Year	Repayments
1984	27
1985	22
1986	18
1987	14
1988	16
1989	10
1990	14
1991	13
1992	10
1993	13
1994	58
1995*	97
1996*	41
1997*	61
1998*	56
1999*	86

Annual Growth Rates	
Fiscal Year	Repayments
1985	-19%
1986	-18%
1987	-22%
1988	14%
1989	-38%
1990	40%
1991	-7%
1992	-23%
1993	30%
1994	346%
1995*	67%
1996*	-58%
1997*	49%
1998*	-8%
1999*	54%

Compound Annual Average Rate of Growth	
Fiscal Year	Repayments
1984-1991	-10%
1991-1993	0%
1994-1999	8%

Years with * are Forecast
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## ANNEX



## **ANNEX 1**

### **ESTABLISHMENTS THAT PARTICIPATED IN 1995 SURVEY**

AlliedSignal Aerospace Canada (Toronto)	Hughes Leitz Optical Technologies
Andrew Canada Inc.	IMP Aerospace Components Ltd.
Atlantis Aerospace Corporation	IMP Group Ltd. - Aerospace Division
Automation Tooling Systems Inc.	Indal Technologies Inc.
Bell Helicopter Textron Can	Innotech Aviaiton Limited
Boeing Canada Technology Ltd. - Arnsprior Division	Invar Manufacturing Ltd.
Boeing Canada Technology Ltd. - Winnipeg Division	Les Caoutchoucs Acton Limitée
Bombardier Inc. Groupe Canadair	Les Technologies Industrielles SNC Inc.
Bristol Aerospace Limited	Linamar Corporation
CAE Aviation Ltd.	Litton Systems Canada Limited
CAE Electronics Ltd.	Lockheed Canada Inc.
CAL Corporation	Lucas Aerospace Engine Control System
Canadian Marconi Company	MacDonald, Dettwiler & Associates Ltd.
Champion Road Machinery	McDonnell Douglas Canada Ltd.
Chicopee Manufacturing Ltd.	Menasco Aerospace Ltd.
Com Dev Ltd.	Messier-Dowty Inc.
Computing Devices Canada Ltd.	Messier-Dowty Inc. - Montreal
de Havilland Inc.	Oerlikon Aerospace Inc.
Derlan Aerospace Canada Ltd.	Pratt & Whitney Canada Inc.
Devtek Corporation	Raytheon Canada Ltd.
DY 4 Systems Inc.	Remtec Inc.
Eurocopter Canada Limited	Spar Aerospace Limited -Aviation Services
FAG Bearings Ltd. Aerospace Division	Spar Aerospace Limited - Space Systems
Field Aviation Company Inc.	Brampton
Fleet Industries, A Fleet Aerospace Co.	Spar Aérospatiale Ltée, Space Systems -
General Electric Canada	Sainte-Anne
General Motors of Canada Limited - Diesel Division	Standard Aero Limited
Haley Industries Limited	Thordon Bearings Inc.
Hawker Siddeley Canada	Unisys GSG Canada
Heroux Inc.	Vadeko Agra Technologies
	Walbar Canada Inc.

**TOP 20: 1994**

**LEADING AEROSPACE AND DEFENCE COMPANIES**

RANKED BY 1994 TOTAL SALES	1994
BOMBARDIER INC - CANADAIR LTD	1
PRATT & WHITNEY CANADA INC.	2
BELL HELICOPTER TEXTRON	3
DE HAVILLAND INC.	4
GENERAL MOTORS OF CANADA; DIESEL DIVISION	5
CAE ELECTRONICS LTD.	6
COMPUTING DEVICES COMPANY	7
SPAR AEROSPACE LTD.	8
ROLLS-ROYCES CANADA LIMITED	9
PARAMAX SYSTEMS CANADA	10
MCDONNELL DOUGLAS CANADA LTD	11
ALLIEDSIGNAL AEROSPACE CANADA	12
TECHNOLOGIES IND. SNC INC.	13
CANADIAN MARCONI CO. (AVIONICS DIV.)	14
LITTON SYSTEMS CANADA LIMITED	15
BRISTOL AEROSPACE LIMITED	16
BOEING CANADA LTD.	17
STANDARD AERO LTD.	18
CANADIAN GENERAL ELECTRIC CANADA INC.	19
MECASNO AEROSPACE LTD.	20

**GUIDELINES AND GLOSSARY OF TERMS  
PROVIDED BY FIRMS PARTICIPATING IN THE  
AEROSPACE AND DEFENCE-RELATED INDUSTRIES  
SURVEY – 1995**

<b>Company Name</b>	The legal name of the company, and in the case of multi divisional companies, indicate the Division or Divisions/Subsidiaries to which the data relates.
<b>Contact Person</b>	The person to be contacted in the event that clarification of data is required.
<b>Currency</b>	Survey returns are reported in current dollars.
<b>Sales</b>	Total sales of the Canadian Company or in the case of multi-divisional companies, the sales of the Division or subsidiary reporting. It <b>should not include</b> the sales of divisions or subsidiaries which are <b>not</b> involved in the Aerospace and Defence Industry, but should include sales by Aerospace and Defence oriented divisions in other industrial sectors.

### **1. Domestic Sales**

Sales made to companies domiciled in Canada, where the products or services are delivered to a Canadian address including sales by a U.S. subsidiary to Canadian companies.

#### **a) Sales to the Canadian Government**

Sales to any Department or Agency of the Federal Government including Crown Corporations.

#### **b) Sales to Canadian Aerospace and Defence Companies**

This category covers sales to companies in the Canadian Aerospace and Defence-related sector which will incorporate the product into a higher assembly. The intention is to eliminate double counting of sales.

Example A — A machine shop manufacturing parts which are sold to a Canadian engine manufacturer would report these sales as "Sales to a Canadian Aerospace and Defence company".

If the engine manufacturer sells engines to a Canadian aircraft manufacturer these sales would be reported as "Sales to a Canadian Aerospace and Defence Company".

If, however, the engine manufacturer sells an engine to an aircraft operator such as an airline, the sale would be reported as "Sales to other Canadian customers".

**c) Sales to other Canadian Customers**

This category covers sales to Canadian customers who are not in the business of manufacturing and selling higher assemblies or products. It includes sales to aircraft operators, maintenance facilities and other non-manufacturing customers.

**Total Domestic Sales**

The sum of a), b), c) preceding.

**2. Export Sales**

This category covers all sales where the product or service is delivered to an address outside Canada, including sales by a Foreign Subsidiary of a Canadian company.

**a) Sales to the United States Government**

All sales to the United States Federal Government, its agencies, Departments, and Administrations.

**b) Sales to U.S. Contractors**

All sales to U.S. companies which incorporate the product into higher order assemblies.

**c) Sales to other U.S. customers**

All sales to U.S. companies not included in a) and b) preceding.

**d) Sales to other foreign governments**

All sales to federal governments, agencies, administrations, and crown corporations except Canada and the United States.

**e) Sales to other foreign contractors**

All sales to foreign companies (other than U.S.) where the product will be incorporated into higher order assemblies.

**f) Sales to other foreign customers**

All export sales other than a), b), c), d) and e) preceding.

**Total Export Sales**

The sum of a), b), c), d), e) and f) preceding.

**3. Total Sales**

The sum of total domestic sales and total export sales.

**4. Military sales**

Estimate: military/defence sales % of total sales

The estimated percentage of total sales which represent military and or security systems and components. This will include both domestic and export sales.

**5. Personnel Costs**

Wages, salaries, bonuses, and fringe benefits for all employees. Does not include Training Costs.

**6. Materials and Supplies**

**a) Purchased from Canadian Aerospace and Defence companies**

Includes Aerospace and Defence components, systems, and sub-systems manufactured to Aerospace and Defence standards by Canadian companies.

Does not include raw materials, commercial or industrial hardware or components.

**b) Purchased from other Canadian Sources**

All other materials and supplies purchased from Canadian companies.

**c) Imported from U.S. Suppliers**

Includes all material of U.S. origin whether procured directly from the supplier or through a Canadian agent.

**d) Imported from other foreign sources**

Includes all material not of Canadian or U.S. origin whether procured directly or through a Canadian agent.

**7. Training Costs**

The estimated cost of employee training whether carried out in house or in external institutions. Does not include that portion of training cost borne by Federal, Provincial, or other government agencies.

**8. Other Costs and Expenditures**

All other costs and expenses not defined above.

**9. Investment**

Total investment from all sources. Includes government contribution.

**a) Plant**

Acquisition or improvements to real property, acquisition, construction or improvements to buildings, and investment in services such as access to electricity, water etc. Includes construction and improvements to specialized test facilities such as test cells.

**b) Machinery**

Acquisition and replacement of machinery, tooling, and specialized equipment where it is the normal practice of the company to capitalize the costs. Includes laboratory equipment.

**c) Research and Development**

All research, design, and development. Does not include plant engineering, production engineering, or quality engineering.

Includes engineering research and development; materials and components; construction, test, and evaluation of prototypes; and such special equipment as may be required for such activities, including pre-production costs.

The percentage of R&D investment paid for by customers i.e. 3<sup>rd</sup> party revenues, to be quoted.

**10. Government Support**

All support in the form of grants and contributions from the Federal Government. Does not include R&D carried out under contract, but support from funded assistance programs such as DIPP, etc. is included. Repayment contributions are included.

**a) Support from Industry Canada for Research and Development**

Support for R&D under the R&D elements of the DIPP.

**b) Support from Industry Canada for Source Establishment**

Support from Industry Canada under the Source Establishment element of the DIPP.

**c) Support from Industry Canada Capital Assistance**

Contributions from Industry Canada for the acquisition of advanced production equipment to modernize or upgrade manufacturing capability.

**d) Support from Industry Canada for Feasibility Studies**

Contributions from Industry Canada under the feasibility study element of the DIPP.

**e) Support from other Departments**

Grants and Contributions from other Federal Government Departments, agencies, and or Crown Corporations.

f) **Repayments**

Repayments to the government of contributions which had been made under the DIPP.

**11. Opening Inventory**

Company owned inventory on hand at the beginning of the year.

**12. Backlog of Orders**

Firm orders on the books at year-end. Includes provisional orders (e.g., letter of intent) and excluded options to be confirmed at a later date.

**13. Employment**

**Engineering/Scientific Employment**

Engineers, scientists, and technicians involved in Design, Research, and Development. Does not include administrative, secretarial, or support staff.

**Production Employment**

All employees engaged in production functions, including, production engineering, quality engineering, material procurement and material handling. Excludes secretarial, administrative, and support staff.

**Other Employment**

All employees not covered in the preceding two groups.

**14. Regional Dispersal**

Breakdown (%) of corporate activity by region. The percentage breakdowns reported are used to estimate the regional distribution of sales and employment.

## **15. Breakdown of Sales by Sub-Sector**

### **Airframe (Sub-sector)**

All structural elements, accessories, components, systems and sub-systems which form part of an aircraft with the exception of avionics, propulsion and defence electronic systems.

### **Propulsion (Sub-sector)**

All structural elements, components, accessories, systems and sub-systems which form part of the propulsion system of an aircraft.

### **Avionics (Sub-sector)**

All electronics systems, sub-systems and components which are carried aboard an aircraft. Includes electrical power generation and conditioning systems. For the purpose of this survey, ground based equipment for navigation and air traffic control, and aircraft simulators are considered to be part of the Avionics Sub-sector.

Excludes spacecraft electronics which for the purposes of this survey are considered to be part of the Space Sub-sector.

### **Space (Sub-sector)**

All structural elements, components, accessories, systems and sub-systems which form part of a space vehicle or satellite, including its payload, propulsion system, imaging radar, and remote sensing equipment.

All elements of the launch complex and earth stations for command, control of, and communication with a space vehicle, including equipment for enhancement of remotely sensed images. Does not include earth station equipment for transmission and reception of commercial telecommunications or television signals.

### **Defence Electronics (Sub-Sector)**

All electronics systems, sub-systems and components which have defence related capabilities.

All non-Aerospace and Defence products and services provided by companies which also produce products or services defined in one or more of the preceding sub-sectors.

## **16. Sales of Proprietary Parts and Systems**

This covers parts and systems which your company manufactures to your own design or specification.

### **Sub-contract Sales**

This covers parts which your company produces under subcontract to a design or specification controlled by others. It includes special services such as heat treatment, impregnation, surface coating, testing, and quality assurance activities carried out under sub-contract.

### **Agency Sales**

This covers the sale and distribution of products **not** of your own manufacture.

### **Repair & Overhaul**

This covers repair and overhaul activities carried out under contract. It does not include repair and overhaul activities carried out by airlines or aircraft operators for their own account.

### **Sales of Services**

These include systems engineering, consultancy and customized maintenance systems, as distinct from the sale of manufactured products.

### **Spares**

Estimate the percentage of total sales in each sub-sector which are sold as spare parts.

**Notes:**

1. Gross Sales (gross sales are the total sales for the sector).
2. Gross Output was estimated with the following formula:

Gross Output = (Total Sales + Ending Inventory) - Opening Inventory

Ending inventory for 1999 was estimated with the following formula:

(Opening Inventory 1998/Order Backlog 1998) \* (Order Backlog 1999).

3. Net Sales for the sector are defined as Gross Sales minus sales to domestic Aerospace and Defence companies (i.e. sales to the sector by firms in the sector itself). Net Sales have traditionally been estimated in previous survey reports to present a sales figure, which in aggregate, avoids double counting of sales among domestic Aerospace and Defence companies.
4. Value Added is an economic concept which measures the value of the output generated by a sector, but avoids double counting the value created by other sector's that supply inputs to that particular sector.

Gross Output of the Aerospace and Defence industries Sector includes the Value Added produced within the sector itself, but it also includes the Value Added produced by other sectors on the inputs purchased by the Aerospace and Defence Sector.

The Value Added produced by the Aerospace and Defence sector is distributed to the factors of production in the form of income. For instance, the income generated by adding value in production is distributed to:

- labour in the form of wages, salaries, etc.;
- the owners of capital in the form of:
  - allowances for depreciation;
  - interest payments to debt holders;
  - profits to equity holders; and,
- governments in the form of taxes, licence fees, etc.

5. The "Other" sub-sector consists mainly of "land and marine vehicles and equipment manufacturers", but it does not include the **Canadian shipbuilders**.
6. Sales data were deflated with Statistics Canada's Industry Selling Price Index for the Aircraft and Parts sector while the Value Added data were deflated with Statistics Canada's Implicit Price Index for GDP in the Aircraft and Parts Sector.

Statistics Canada's Price Indexes used to deflate Sales and Value Added per worker are shown below.

YEAR	INDUSTRY SELLING PRICE INDEX - AIRCRAFT AND PARTS	GDP DEFLATOR - AIRCRAFT AND PARTS SECTOR
1984	0.899	1.054
1985	0.963	1.141
1986	1.000	1.000
1987	1.002	1.049
1988	1.026	0.959
1989	1.056	1.085
1990	1.090	1.125
1991	1.126	1.163
1992	1.176	1.326
1993	1.235	1.278
1994	1.313	1.227
1995	1.379	1.213
1996*	1.432	1.232
1997*	1.488	1.250
1998*	1.545	1.270
1999*	1.605	1.289

\* Note: The indexes were projected over the forecast period by multiplying 1994 actual data with the average annual compound growth rate of growth in the index prevailing between 1984 and 1994. This is equivalent to assuming that inflation in the sector over the forecast recovery period will be comparable to the rate prevailing prior to 1994. Since deflators for the defence sub-sector are not readily available, the Aircraft and Parts deflators were used. The latter do not accurately measure inflation in the defence sub-

sector, but it is difficult to say whether they overestimate or underestimate inflation in the defence sub-sector. If anything Statistic Canada indexes for Aircraft and Parts generally increased faster prior to 1994 than its indexes for the "Other Electronics Sector" where some of the Avionics and Defence Electronics firms are located. In view of this, the indexes used may overstate inflation and thus tend to underestimate labour productivity, estimates.

### **Compound Annual Average Rate Of Growth (CAARG)**

The (CAARG) is a useful measure for comparing two rates of growth in different time periods when the two time periods are of different length. Essentially it measures a rate of growth, which if compounded annually, would project the initial annual observation in a time series to the level of the last observation. The rate is an average in the sense that the same rate applies each year over the period in question. Alternatively one could compare a simple average rate of growth over two different periods, however, a simple average may over or understate the actual rates rate of growth if there are extreme values (i.e. unusually high or low values in the data).

To calculate the CAARG that would project the level of gross sales in 1984 to the level prevailing seven years later in 1991, use the following formula:

$$\text{CAARG} = \{[(\text{Gross Sales 1991}/\text{Gross Sales 1984})^{(1/7)}] - 1\} * 100$$

The CAARG calculated above may be compared with similar rates of growth estimated for the two year recessionary period 1991 to 1993, and the five-year 1994/1999 forecast period. Such comparisons give some idea of the relative magnitude of the recession as well as the relative strength of the recovery compared with pre-recessionary rates of growth in the industry.



